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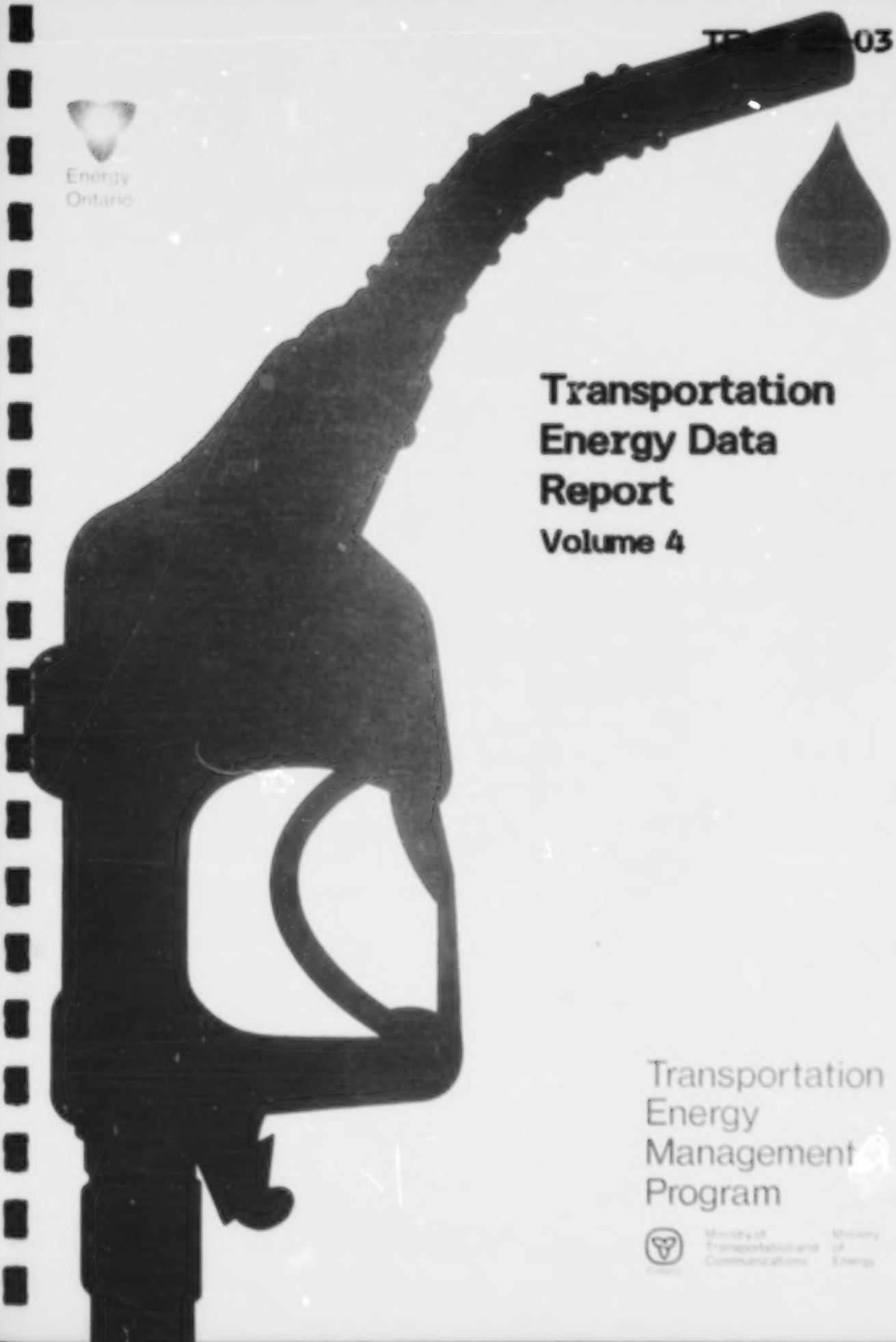

# Transportation Energy Data Report

## Volume 4

Transportation Energy Management Program

Ministry of Transportation and Communications
Ministry of Energy

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# Transportation Energy Data Report

## Volume 4

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## PREFACE

The Transportation Energy Management Program (TEMP) is a joint program of the Ministry of Transportation and Communications and the Ministry of Energy. TEMP's aim is to initiate and co-ordinate actions that will reduce Ontario's transportation oil use by increasing the efficiency with which oil products are used, by reducing travel requirements, and by introducing alternatives to oil products as transportation fuels.

This report is produced in response for the need expressed by government agencies, research groups' and businesses for a central source of transportation energy data. These data are collected and published annually in a comprehensive format under one cover for greater convenience. This is the fourth volume of the series published.

The Transportation Energy Data Reports are used to monitor current trends in transportation energy demand, to ascertain relationships between various transportation energy variables, and to provide a forum for the presentation for transportation energy data in graphic and tabular form.

Some additions contained in this edition include information on propane fuel costs and Natural Gas Conversion grants.

TABLE OF CONTENTS


| | PAGE |
|---|---|
| SECTION ONE: TRANSPORTATION ENERGY USE AND SUPPLY . . . . . | 1 |
| 1.1/ Ontario's Primary Energy Sources, 1984 . . . . . | 2 |
| 1.2/ Transportation Energy Consumption by Province, 1984. . . . . | 3 |
| 1.3/ Ontario's Primary Energy Consumption, 1984 . . . . . | 5 |
| 1.4/ Transportation Energy Use by Fuel Type, Ontario, 1984. . . . | 6 |
| 1.5/ Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984 . . . . . | 7 |
| 1.6/ Propane Use by Major Consuming Sectors, 1984 . . . . . | 9 |
| 1.7/ Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981- March 31, 1985. . . . | 11 |
| 1.8/ Provincial Breakdown of Conversions Receiving Federal Natural Gas Conversion Grants, February 1983 to May 1995 . . | 13 |
| 1.9/ Transportation Energy Use by Mode, Ontario, 1984 . . . . . | 15 |
| 1.10/ Average Number of Litres of Gasoline Per Automobile, by Province, 1984 . . . . . | 16 |
| 1.11/ Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984 . . . . . | 18 |
| 1.12/ Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984 . . . . . | 20 |
| 1.13/ Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984 . . . . . | 22 |
| 1.14/ Ontario's Regular Leaded Fuel Prices, Nominal and Real, 1971-1984 . . . . . | 24 |
| 1.15/ Ontario's Propane Fuel Prices, Nominal and Real, 1981-1984 . . . . . | 26 |
| 1.16/ Breakdown of Average Leaded Gasoline Prices, Ontario, July 1985 . . . . . | 27 |
| 1.17/ Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel, Fuel, 1970-1984 . . . . . | 29 |
| 1.18/ Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario, 970-1984 . . . . | 31 |

PAGE

SECTION TWO: HIGHWAY MODES . . . . . 33

2.1/ AUTOMOBILES . . . . . 34

2.1.1/ Number of Registered Passenger Vehicles, Ontario, 1970-1984 . . . . . 34

2.1.2/ Passenger Car Registration by Number of Cylinders, Ontario, 1970-1984 . . . . . 36

2.1.3/ New Care Sales, North America and Imported, Ontario, 1975-1984 . . . . . 38

2.1.4/ Number of Cars Per Licensed Driver, Ontario, 1970-1984 . . . . . 40

2.1.5/ Number of Cars Per Licensed Driver, Ontario, 1970-1984 . . . . . 42

2.1.6/ Average Fuel Efficiency of North American and Imported Automobiles, Ontario, 1977-1984 . . . . . 44

2.1.7/ Sales-Weighted Weight Class Distribution of New Automobile, Ontario, 1975-1983 . . . . . 46

2.1.8/ Total Vehicle-Kilometres Travelled vs Average Annual Travel Per Vehicle, Ontario, 1970-1984 . . . . . 48

2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1985 . . . . . 50

2.2/ TRUCKS . . . . . 52

2.2.1/ Commercial Truck/Tractor Registrations, Ontario, 1970-1984 . . . . . 52

2.2.2/ Truck Sales, North American and Imported, Ontario, 1975-1984 . . . . . 54

2.2.3/ Weight Class Distribution of New Truck Sales Ontario, 1984 . . . . . 56

2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario, 1975-1983 . . . . . 58

2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck: Ontario's For-Hire Truck Fleet, 1975-1983 60

2.2.6/ Linehaul Costs in Cents Per Kilometre, Ontario, 1984 . . . . . 62

PAGE

2.3/ URBAN TRANSIT . . . . . 64

2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984 . . . . . 64

2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984 . . . . . 66

2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario, 1978-1984 . . . . . 68

2.2.4/ Urban Transit: Electric Power Consumption, Ontario, 1978-1984 . . . . . 70

2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984 . . . . . 72

2.4/ MOTORCYCLES AND MOPEDS . . . . . 74

2.4.1/ Motorcycle Registrations, Ontario, 1970-1984 . . . . 74

2.4.2/ Moped Registrations, Ontario, 1976-1984 . . . . . 76

APPENDIX A/ Ontario Government Policy Targets . . . . . 78

APPENDIX B/ Consumer Price Index, Ontario, 1971-1984 . . . . . 79

APPENDIX C/ Metric Conversion Table . . . . . 80

## LIST OF TABLES


| | | PAGE |
|---|---|---|
| 1.2/ | Transportation Energy Consumption by Province, 1984 | 3 |
| 1.5/ | Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984 | 7 |
| 1.6/ | Propane Use by Major Consuming Sectors, Ontario, 1984 | 9 |
| 1.7/ | Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981 to March 31, 1985 | 11 |
| 1.8/ | Provincial Breakdown of Conversions Receiving Federal Natural Gas Conversion Grants, February 1983 to May 1985 | 13 |
| 1.10/ | Average Number of Litres of Gasoline Consumed Per Automobile, by Province, 1984 | 16 |
| 1.11/ | Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984 | 18 |
| 1.12/ | Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984 | 20 |
| 1.13/ | Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984 | 22 |
| 1.14/ | Ontario's Regular Leaded Fuel Prices, Nominal and Real, 1971-1984 | 24 |
| 1.15/ | Ontario's Propane Fuel Prices, Nominal and Real 1981-1984 | 26 |
| 1.17/ | Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel Fuel, 1970-1984 | 29 |
| 1.18/ | Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario, 1970-1984 | 31 |
| 2.1.1/ | Number of Registered Passenger Vehicles, Ontario, 1970-1984 | 34 |
| 2.1.2/ | Passenger Car Registrations by Number of Cylinders, Ontario 1970-1984 | 36 |
| 2.1.3/ | New Car Sales, North America and Imported, Ontario, 1975-1984 | 38 |
| 2.1.4/ | Total Number of Licensed Drivers, Ontario, 1970-1984 | 40 |
| 2.1.5/ | Number of Cars Per Licensed Driver, Ontario, 1970-1984 | 42 |
| 2.1.6/ | Average Fuel Efficiency of North American and Imported Automobiles, Ontario, 1977-1984 | 44 |

PAGE

2.1.7/ Sales-Weighted Weight Class Distribution of New Automobiles, Ontario, 1975-1983 . . . . . 46

2.1.8/ Total Vehicle-Kilometres Travelled vs Average Annual Travel Per Vehicle, Ontario, 1970-1984 . . . . . 48

2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1984 . . . . . 50

2.2.1/ Commercial Truck/Tractor Registration, Ontario, 1970-1984 . 52

2.2.2/ New Truck Scales, North American and Imported, Ontario, 1975-1984 . . . . . 54

2.2.3/ Weight Class Distribution of New Truck Sales, Ontario, 1984 . . . . . 56

2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario 1975-1983 . . . . . 58

2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck: Ontario's For-Hire Truck Fleet, 1975-1983 . . . . . 60

2.2.6/ Line Haul Costs, Cents per Kilometre, Ontario, 1984 . . . . 62

2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984 . . . . . 64

2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984 . 66

2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario, 1978-1984 . . . . . 68

2.3.4/ Urban Transit: Electric Energy Consumption, Ontario, 1978-1984 . . . . . 70

2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984 . . . . . 72

2.4.1/ Motorcycle Registrations, Ontario, 1970-1984 . . . . . 74

2.4.2/ Moped Registrations, Ontario, 1976-1984 . . . . . 76

## LIST OF FIGURES


| | | PAGE |
|---|---|---|
| 1.1/ | Ontario's Primary Energy Sources, 1984 | 2 |
| 1.2/ | Transportation Energy Consumption by Province, 1984 | 4 |
| 1.3/ | Ontario's Primary Energy Consumption, 1984 Estimates | 5 |
| 1.4/ | Transportation Energy by Fuel Type, Ontario, 1984 | 6 |
| 1.5/ | Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984 | 8 |
| 1.6/ | Propane Use by Major Consuming Sectors, Ontario, 1984 | 10 |
| 1.7/ | Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981 to March 31, 1985 | 12 |
| 1.8/ | Provincial Breakdown of Conversions Receiving Federal Natural Gas Conversion Grants, February 1983 to May 1985 | 14 |
| 1.9/ | Transportation Energy Use by Mode, Ontario, 1984 | 15 |
| 1.10/ | Average Number of Litres of Gasoline Consumed Per Automobile, by Province, 1984 | 17 |
| 1.11/ | Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984 | 19 |
| 1.12/ | Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984 | 21 |
| 1.13/ | Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984 | 23 |
| 1.14/ | Ontario's Regular Leaded Fuel Prices, Nominal and Real, 1971-1984 | 25 |
| 1.15/ | Ontario's Propane Fuel Prices, Nominal and Real, 1981-1984 | 27 |
| 1.16/ | Breakdown of Average Leaded Gasoline Prices, Ontario, July 1985 | 28 |
| 1.17/ | Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel Fuel, Ontario, 1970-1984 | 30 |
| 1.18/ | Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario, 1970-1984 | 32 |
| 2.1.1/ | Number of Registered Passenger Vehicles, Ontario, 1970-1984 | 35 |

PAGE

2.1.2/ Passenger Car Registrations by Number of Cylinders, Ontario 1970-1984 . . . . . 37

2.1.3/ New Car Sales, North American and Imported, Ontario, 1975-1984 . . . . . 39

2.1.4/ Total Number of Licensed Drivers, Ontario, 1970-1984 . . . 41

2.1.5/ Number of Cars Per Licensed Driver, Ontario, 1970-1984 . . 43

2.1.6/ Average Fuel Efficiency of North American and Imported Automobiles, Ontario, 1977-1984 . . . . . 45

2.1.7/ Sales-Weighted Weight Class Distribution of New Automobiles, Ontario, 1975-1983 . . . . . 47

2.1.8/ Total Vehicle-Kilometres Travelled vs. Average Annual Travel Per Vehicle, Ontario, 1970-1984 . . . . . 49

2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1984 . . . . . 51

2.2.1/ Commercial Truck/Tractor Registrations, Ontario, 1970-1984 53

2.2.2/ New Truck Sales, North America and Imported, Ontario, 1975-1984 . . . . . 55

2.2.3/ Weight Class Distribution of New Truck Sales, Ontario, 1984 . . . . . 57

2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario, 1975-1983 . . . . . 59

2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck: Ontario's For-Hire Truck Fleet, 1975-1983 . . . . . 61

2.2.6/ Operation Costs for Paved Road Transport, Ontario, 1984 . . 63

2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984 . . . . . 65

2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984 . 67

2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario, 1978-1984 . . . . . 69

2.3.4/ Urban Transit: Electric Energy Consumption, Ontario, 1978-1984 . . . . . 71

2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984 . . . . . 73

PAGE

2.4.1/ Motorcycle Registrations, Ontario, 1970-1984 . . . . . 75

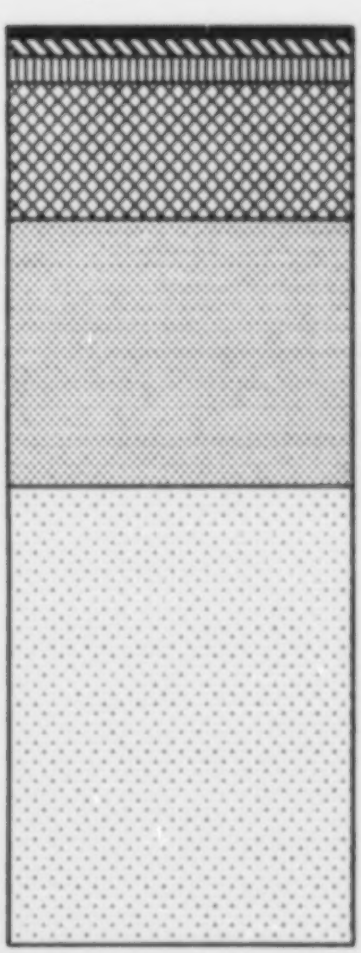
2.4.2/ Moped Registrations, Ontario, 1976-1984 . . . . . 77

# SECTION ONE:

# TRANSPORTATION ENERGY USE AND SUPPLY

## 1.1/ Ontario's Primary Energy Sources, 1984

The largest proportion (85%) of Ontario's total energy supplies originate within Canada. Fifty percent comes from the province of Alberta in the form of crude oil and natural gas. Ontario generates 29% of its own energy primarily through nuclear-powered, coal-or hydro-generated electricity. Surprisingly, none of the energy consumed in Ontario originates from outside of North American. However, the entire world market dictates supply and pricing; therefore, independence from foreign sources is illusory.




*Source : Ministry of Energy*

**Figure 1.1/ Ontario's Primary Energy Sources, 1984**

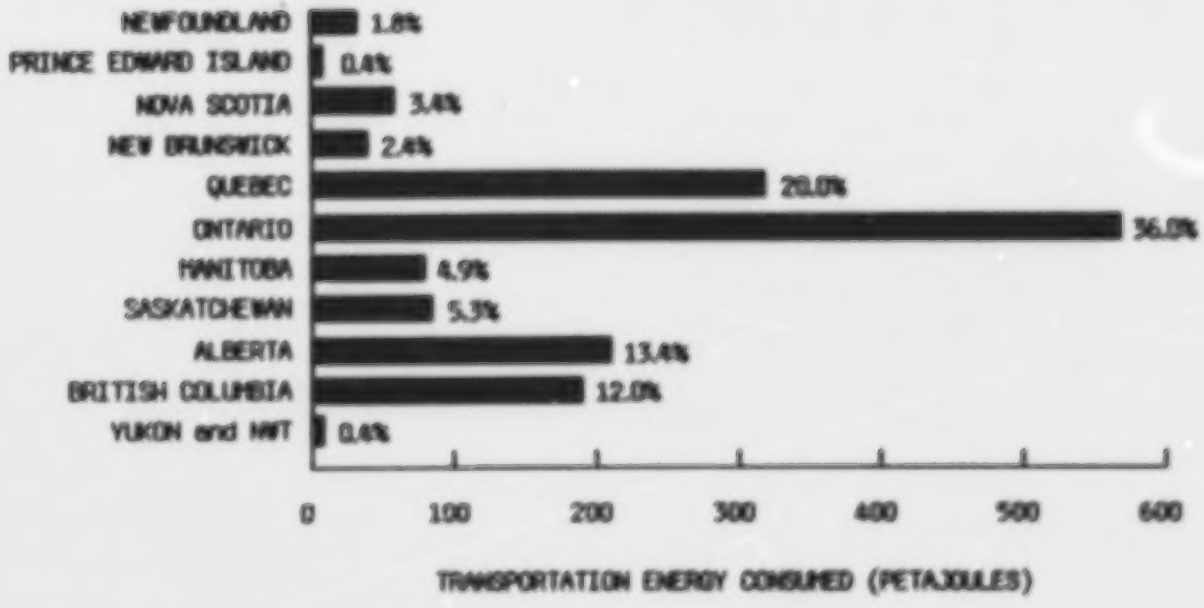
## 1.2/ Transportation Energy Consumption by Province, 1985

As shown in the accompanying bar graph, the largest proportion of transportation energy consumption within Canada occurs in the province of Ontario. Ontario accounts for 36% of Canada's total transportation energy use. Although this might be expected, given the larger number of motor vehicles, licensed drivers, and kilometres of highway, it reveals Ontario's greater dependence on changes affecting transportation energy consumption, supply and price.

**Table 1.2/ Transportation Energy Consumption by Province, 1984**

| Province | Transportation Energy Consumption (Petajoules) | Percent |
|---|---|---|
| Newfoundland | 28.5 | 1.8 |
| Prince Edward Island | 6.2 | .4 |
| Nova Scotia | 54.1 | 3.4 |
| New Brunswick | 38.5 | 2.4 |
| Quebec | 317.8 | 20.0 |
| Ontario | 568.0 | 36.0 |
| Manitoba | 78.5 | 4.9 |
| Saskatchewan | 85.2 | 5.3 |
| Alberta | 211.8 | 13.4 |
| British Columbia | 189.7 | 12.0 |
| Yukon and NWT | 5.6 | .4 |
| TOTAL | 1583.8 | 100.0 |

Source: Statistics Canada (57-003)

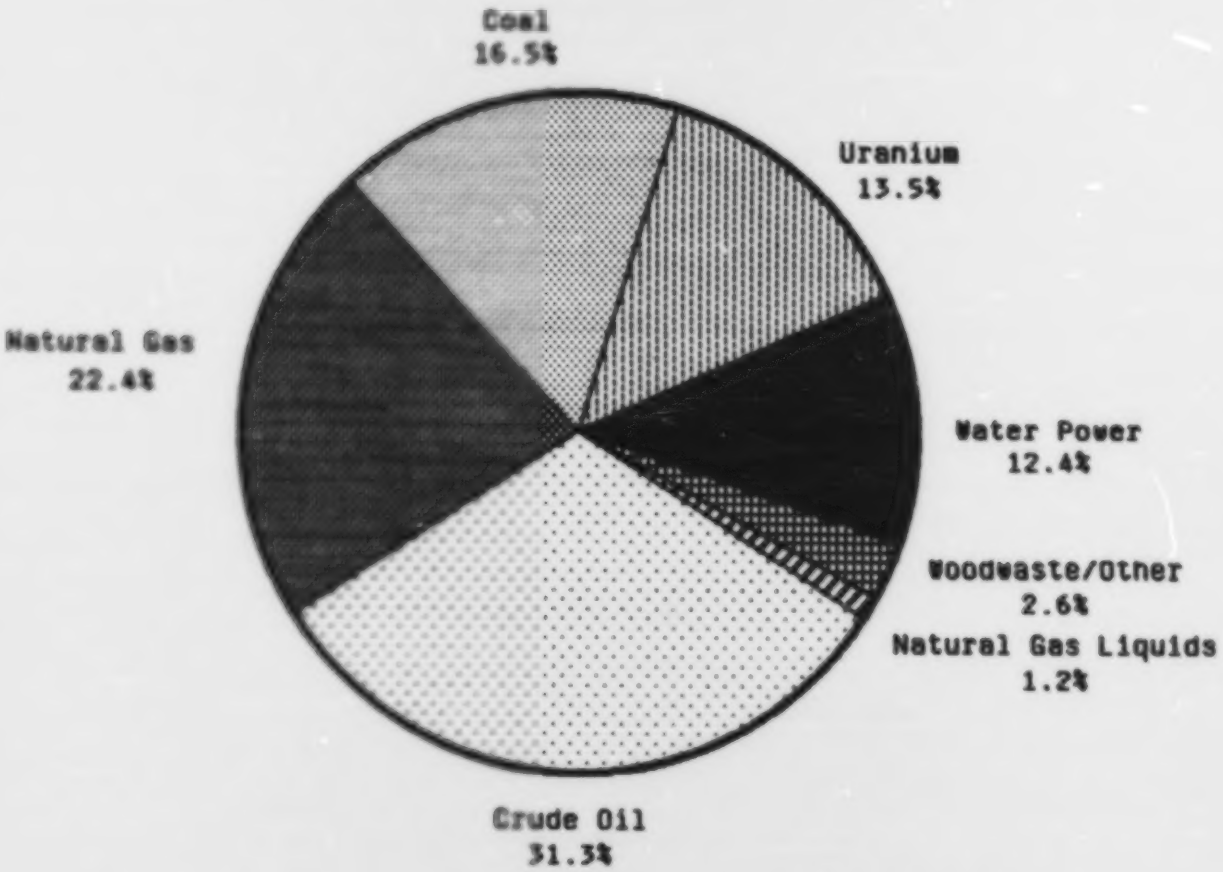



*Source : Statistics Canada*

Figure 1.2/ Transportation Energy Consumption by Province, 1984

## 1.3/ Ontario's Primary Energy Consumption, 1984

The accompanying pie graph shows the diversified nature of Ontario's primary energy sources. Crude oil, natural gas, coal, water power and uranium each account for more than 10% of the total energy supply. Although the consumption of crude oil has decreased from the reported 34.6% in 1982, at 31.3% it still constitutes the largest source of energy in the province. Natural gas remains the second largest source while natural gas liquids such as propane are becoming increasingly popular as energy sources and now account for 1.2% of total consumption.




TOTAL CONSUMPTION : 3432 PETAJOULES

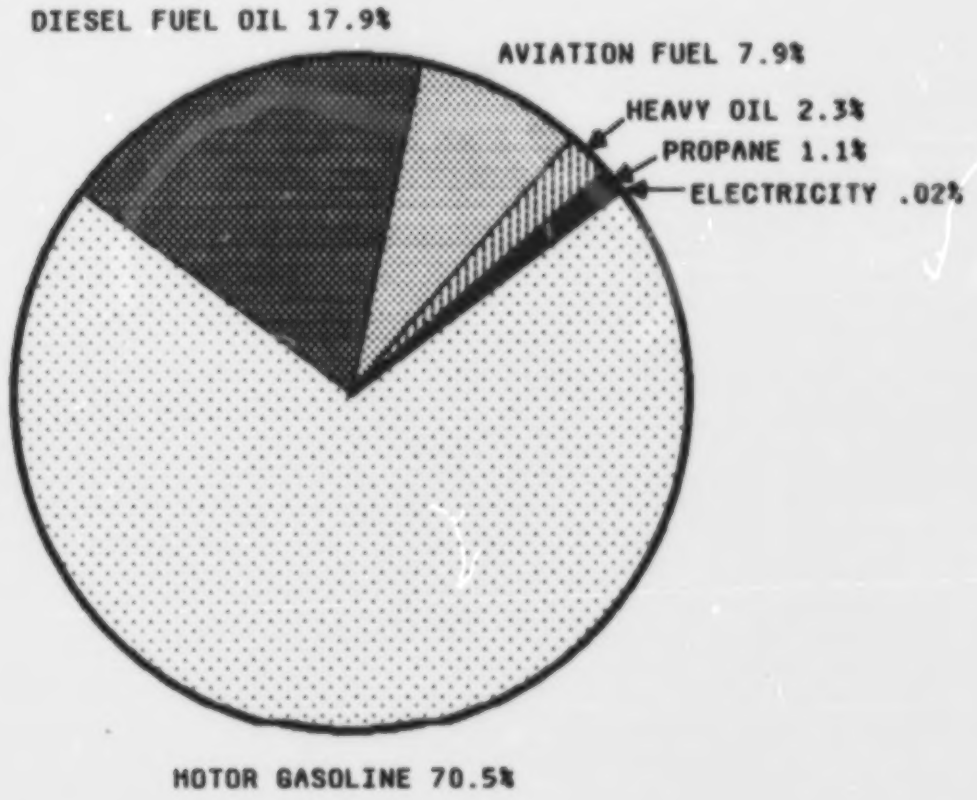
*Source : Ministry of Energy*

**Figure 1.3/ Ontario's Primary Energy Consumption, 1984 Estimates**

**1.4/ Transportation Energy Use by Fuel Type, Ontario, 1984**

In the transportation sector, approximately 71% of the energy consumption is in the form of gasoline. The next largest share, accounting for 18% of the transportation energy consumed, is diesel fuel which is used by trucks, railways, and ships. Aviation fuel, heavy fuel oil, propane, and electricity combine to account for the remaining 11% of transportation energy consumed.

Natural Gas is also being used as a transportation fuel in Ontario; however, its effect on total Transportation Energy use is minimal.




*Source : Statistics Canada*

**Figure 1.4/ Transportation Energy by Fuel Type, Ontario, 1984**

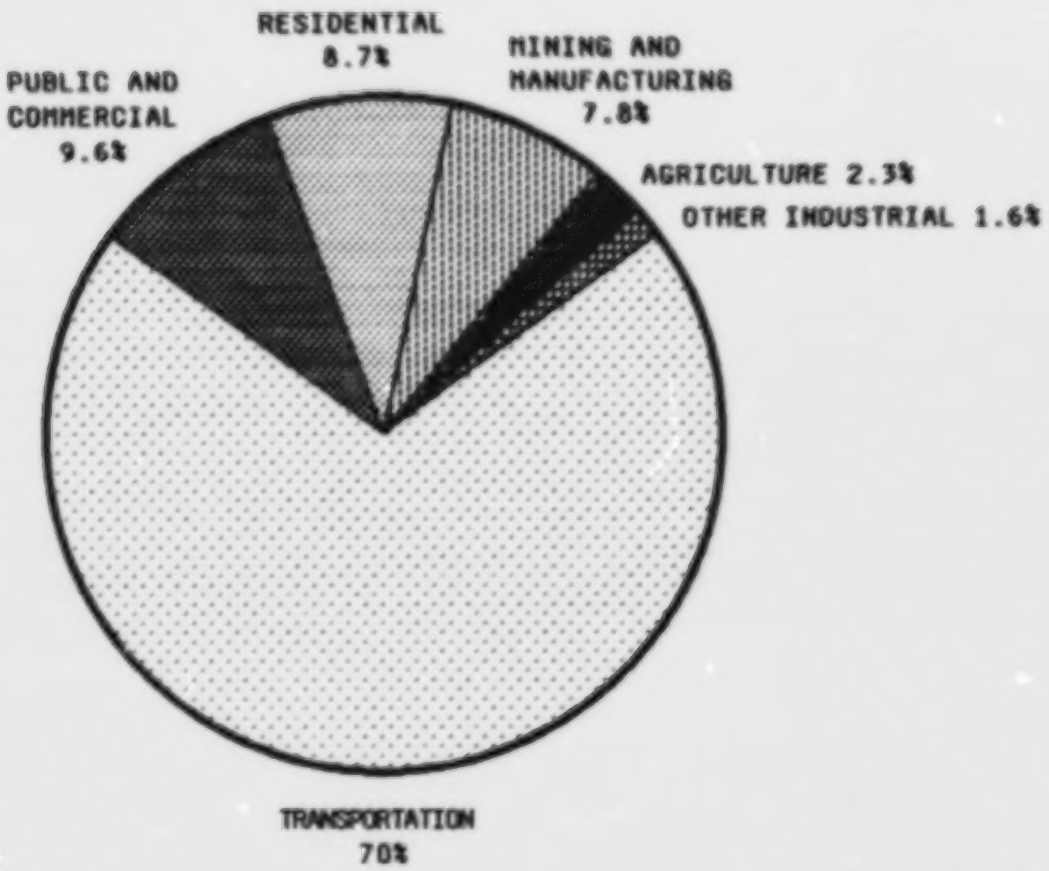
## 1.5/ Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984

The largest proportion of the total refined petroleum products use in Ontario is consumed by the transportation sector. This sector accounts for an overwhelming 70% of all petroleum products. The accompanying pie graph depicts the significance of petroleum products, conservation, and substitution related to the transportation sector. Any change in the supply, demand, or pricing of petroleum products will have a much more profound impact on the transportation sector than on the remaining sectors of the economy. The transportation sector is unique, when compared to the other user sectors, in that it is almost totally dependent on petroleum products as its motive fuel. The other user sectors have been switching from petroleum-based products to less expensive alternatives.

**Table 1.5/ Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984**

| Sector | Refined Petroleum Products Use (Terajoules) | Percent |
|---|---|---|
| Mining and Manufacturing | 60.3 | 7.8 |
| Other Industrial | 12.2 | 1.6 |
| Transportation | 534.0 | 70.0 |
| Agriculture | 17.8 | 2.3 |
| Residential | 67.4 | 8.7 |
| Public and Commercial | 73.9 | 9.6 |
| TOTAL | 765.6 | 100.0 |

Source: Statistics Canada (57-003)




*Source : Statistics Canada (57-003)*

Figure 1.5/ Refined Petroleum Product Use by Major Consuming Sector, Ontario, 1984

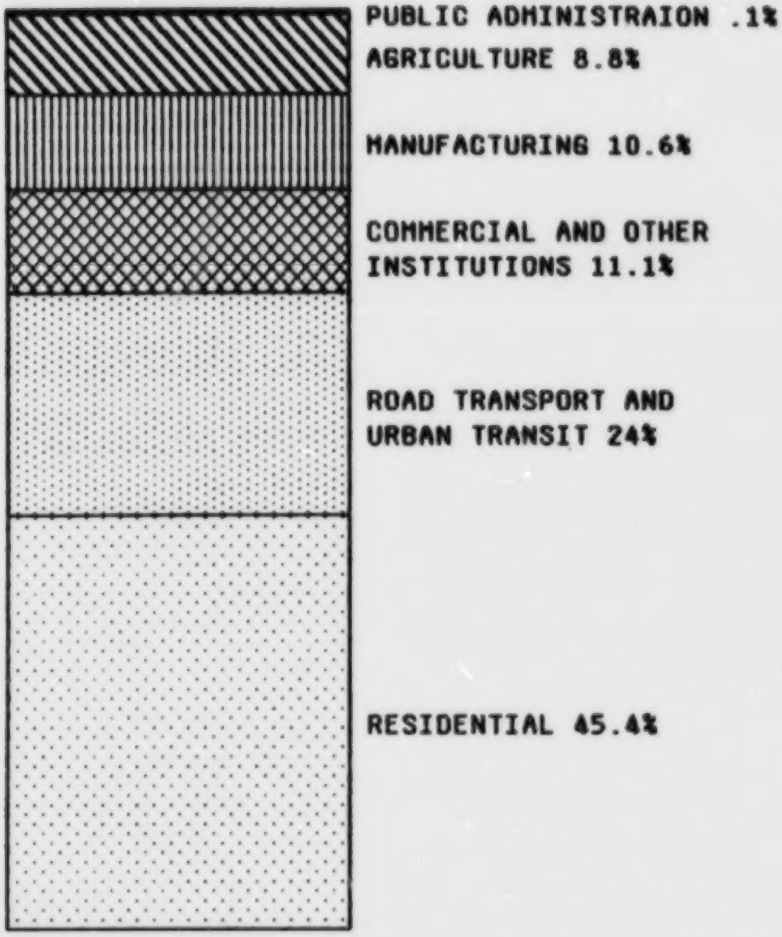
## 1.6/ Propane Use by Major Consuming Sectors, 1984

Ontario has only recently begun using propane as a transportation fuel. In 1982, road transport and urban transit accounted for only 6.9% of propane consumption. Once urban transit began using propane in July 1982 and a concerted effort to convert motor vehicles to propane was implemented, the number of vehicles using propane escalated. By 1984, road transport and urban transit accounted for 24% of Ontario's propane consumption.

**Table 1.6/ Propane Use by Major Consuming Sectors, 1984**

| Sector | Energy Comsumed (Terajoules) | Percent |
|---|---|---|
| Manufacturing | 2 573 | 10.6 |
| Road Transport and Urban Transit | 5 873 | 24.0 |
| Agriculture | 2 143 | 8.8 |
| Residential | 11 095 | 45.4 |
| Public Administration | 30 | .1 |
| Commicial and Other Institutions | 2 722 | 11.1 |
| TOTAL | 24 436 | 100.0 |

Source: Statistics Canada (57-003)




*Source : Statistics Canada (57-003)*

**Figure 1.6/ Propane Use by Major Consuming Sectors, Ontario, 1984**

## 1.7/ Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981 - March 31, 1985

Although the percentages for those provinces receiving federal propane conversion grants differ form the actual percentages for propane vehicle distribution, the figures can be used as a rough estimate of propane use. The percentages indicate that Ontario has be significant proportion of the propane vehicles in Canada.

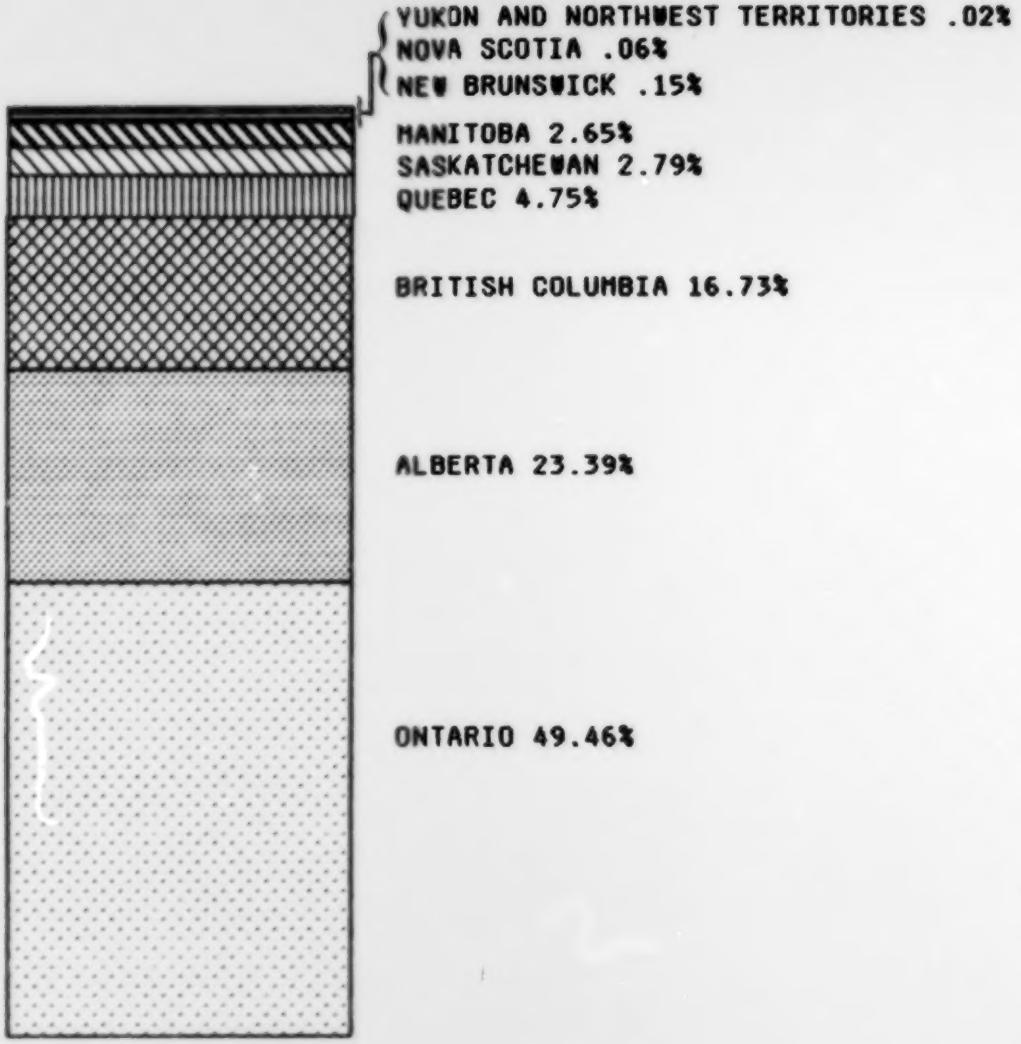
The vehicle manufactures are playing an increasingly important role in the development of the propane vehicle industry, and had sales of 8 964 propane vehicles to the end of July 1983. The ten largest conversion companies completed 59 980 conversions to the end of July 1983. On the basis of this information, it was estimated that as of July 1984 there were approximately 76 000 vehicles operating on propane in Canada. Data as of October 31, 1984 indicates there were an estimated 80 500 propane vehicles on the road; the bulk of these operate in Ontario.

The Federal Propane Conversion Grants Program ended March 31, 1985. The following figures are the culmination of the Program.

**Table 1.7/ Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981 - March 31, 1985**

| Province | Vehicles Converted | Percentage |
|---|---|---|
| Prince Edward Island | - | - |
| Nova Scotia | 36 | .06 |
| New Brunswick | 96 | .15 |
| Quebec | 2 959 | 4.75 |
| Ontario | 30 840 | 49.46 |
| Manitoba | 1 652 | 2.65 |
| Saskatchewan | 1 740 | 2.79 |
| Alberta | 14 587 | 23.39 |
| British Columbia | 10 432 | 16.73 |
| Yukon & Northwest Territories | 14 | .02 |
| TOTAL | 62 356 | 100.0 |

Source: Energy, Mines and Resources Canada




*Source : Energy, Mines and Resources Canada*

**Figure 1.7/ Provincial Breakdown of Conversions Receiving Federal Propane Conversion Grants, April 1981 to March 31, 1985**

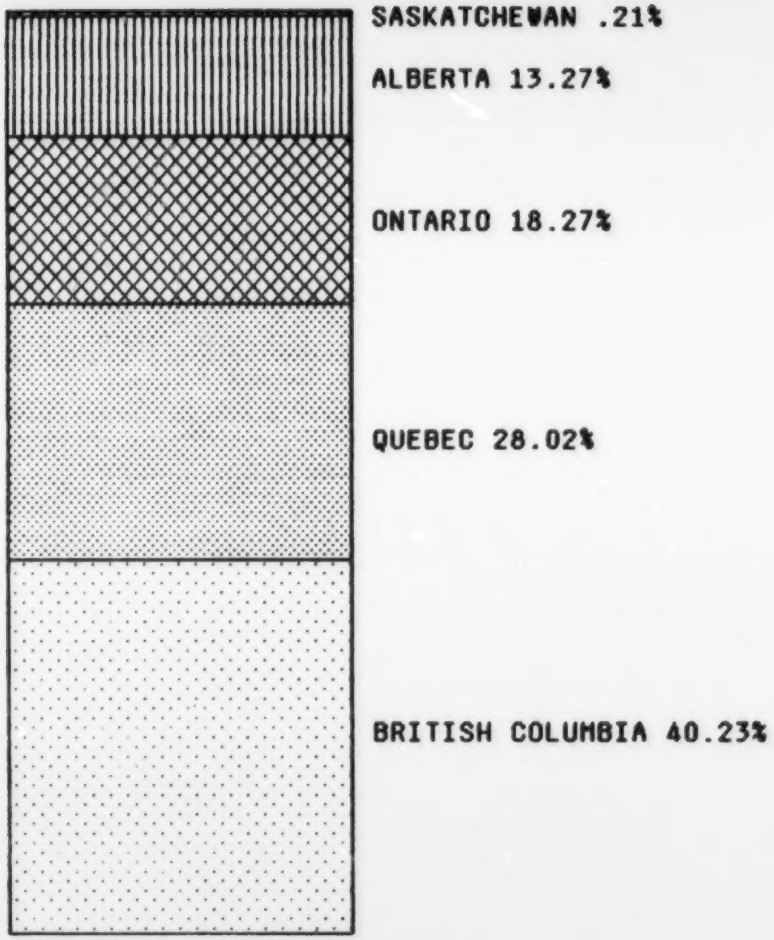
## 1.8/ Provincial Breakdown of Conversions Receiving Federal Natural Gas Grants, February 1983 to May 1985

In 1982, the Federal government began a Natural Gas Conversion grant program to encourage drivers to switch to natural gas. To date 2819 vehicles in the country have been converted under this program. British Columbia has the greatest percentage of conversions at 40.23%. Ontario is third in the number of conversions at 18.27%. Although the percentages for those provinces receiving federal natural grant conversion grants differ from the actual percentages for natural gas vehicle distribution, the figures can be used as a rough estimate of natural gas use.

**Table 1.8/ Provincial Breakdown of Conversions Receiving Federal Natural Gas Conversion Grants, February 1983 - May 1985**

| Province | Vehicles Converted 1985 to May 1985 | Total Vehicle Converted | Percentage |
|---|---|---|---|
| Quebec | 67 | 790 | 28.02 |
| Ontario | 39 | 515 | 18.27 |
| Alberta | 37 | 374 | 13.27 |
| British Columbia | 233 | 1134 | 40.23 |
| Saskatchewan | 0 | 6 | .21 |
| TOTAL | 376 | 2819 | 100.0 |

Source: Energy, Mines and Resources Canada

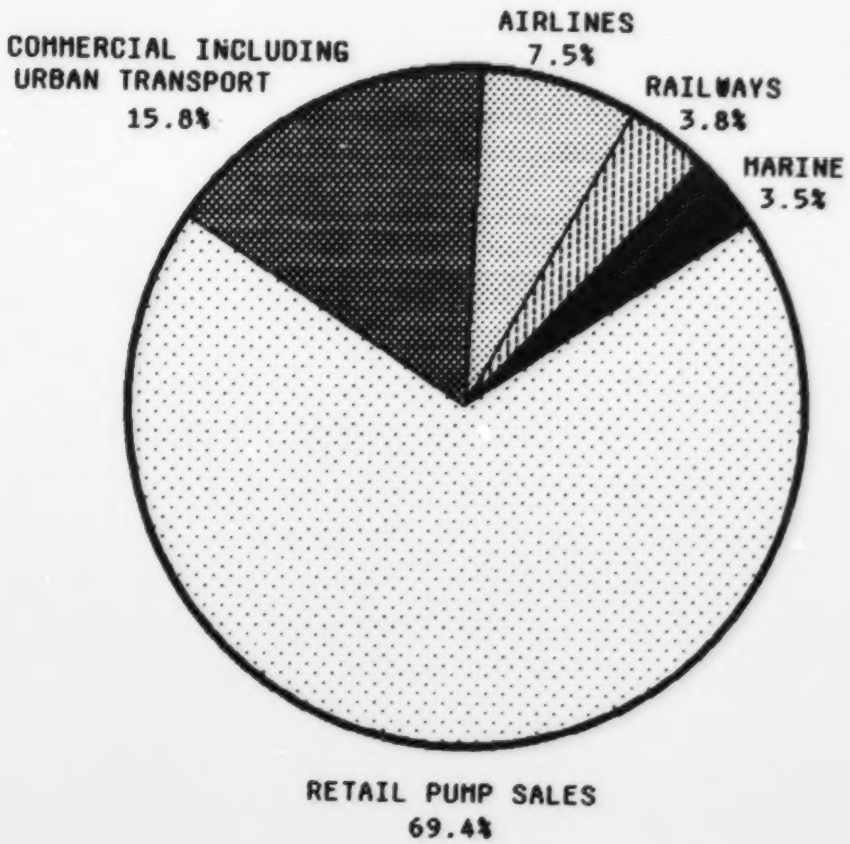



*Source : Energy, Mines and Resources Canada*

**Figure 1.8/ Provincial Breakdown of Conversions Receiving Federal Natural Gas Conversion Grants, February 1983 to May 1985**

**1.9/ Transportation Energy Use by Mode, Ontario, 1984**

As shown in the accompanying pie graph, in 1984, road transportation accounted for 85.2% of the energy consumed by the transportation sector. Commercial fuel sales (15.8%) and retail pump sales (69.4%) combined represent the total energy consumed by road transportation. The remaining modes of transportation (air, marine, and rail) collectively accounted for 14.8% of the energy consumption.




*Source : Statistics Canada (57-003)*

**Figure 1.9/ Transportation Energy Use by Mode, Ontario, 1984**

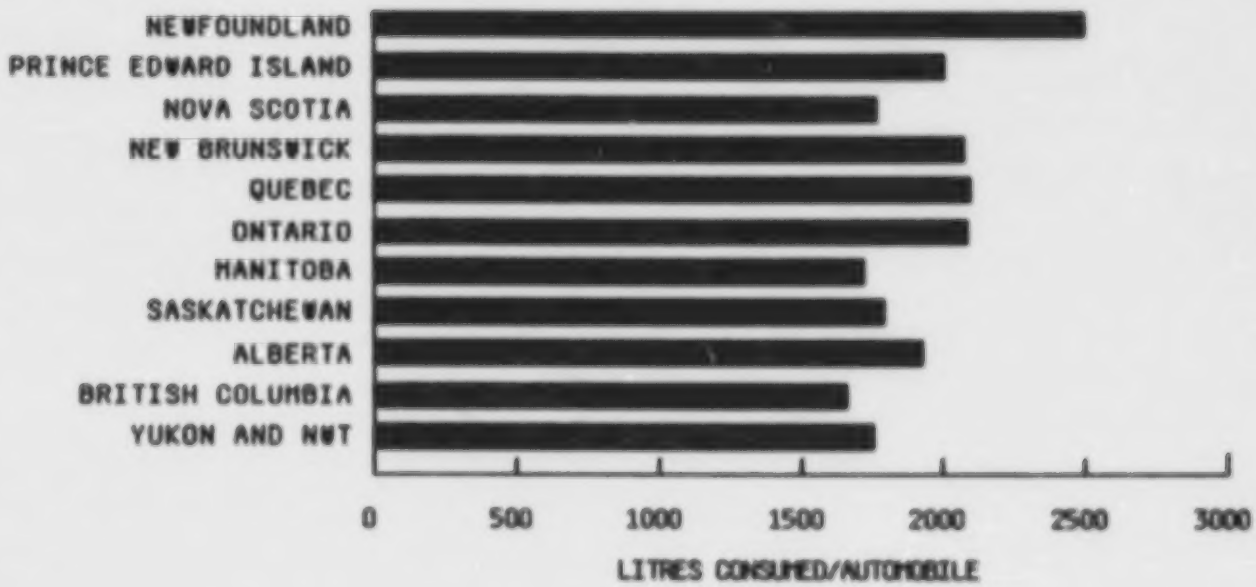
## 1.10/ Average Number of Litres of Gasoline Per Automobile, by Province, 1984

The average fuel consumption for an automobile in Ontario is approximately 2100 L annually. Ontario's consumption ranks third among the provinces. There seems to be little correlation between the regions of Canada and the average fuel consumption per automobile, except for the western provinces having proportionately less fuel consumed per automobile.

**Table 1.10/ Average Number of Litres of Gasoline Consumed Per Automobile, by Province, 1984**

| Province | Road Vehicle Registrations (thousands) | Gasoline Consumed (megalitres) | Number of Litres Per Vehicle |
|---|---|---|---|
| Newfoundland | 199 | 497.1 | 2 498 |
| Prince Edward Island | 71 | 143.3 | 2 018 |
| Nova Scotia | 550 | 976.3 | 1 775 |
| New Brunswick | 389 | 810.5 | 2 084 |
| Quebec | 2 924 | 6 172.0 | 2 111 |
| Ontario | 5 182 | 10 842.2 | 2 092 |
| Manitoba | 689 | 1 191.2 | 1 729 |
| Saskatchewan | 694 | 1 246.1 | 1 796 |
| Alberta | 1 796 | 3 481.1 | 1 939 |
| British Columbia | 2 084 | 3 460.0 | 1 660 |
| Yukon & NWT | 41 | 72.3 | 1 763 |

Source: Statistics Canada (57-003, 53-219)




*Source : Statistics Canada (57-003, 53-219)*

**Figure 1.10/ Average Number of Litres of Gasoline Consumed Per Automobile, by Province, 1984**

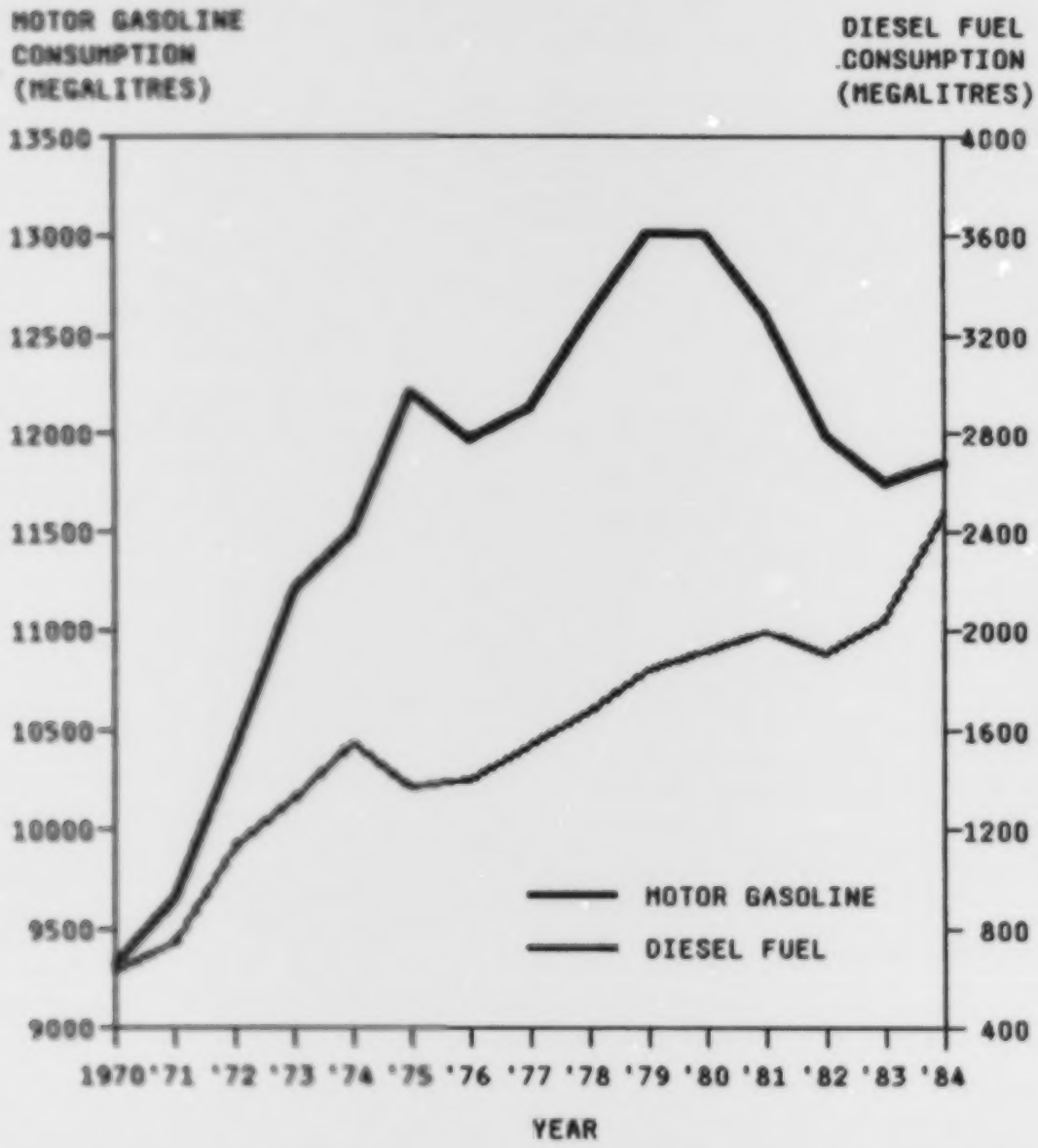
## 1.11/ Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984

Despite a slight increase in 1984, motor gasoline consumption by Ontario's transportation sector has been decreasing since 1980 as a result of greater awareness of importance of fuel conservation and fuel efficient vehicles. Diesel fuel consumption has risen by 292% since 1970. This growth can be attributed to increased use of diesel fuel by automobiles and the trend away from vehicles powered by motor gasoline and toward vehicles powered by other forms of transportation fuel, such as diesel fuel.

**Table 1.11/ Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984**

| YEAR | G A S O L I N E (megalitres) | DIESEL FUEL (megalitres) |
|---|---|---|
| 1970 | 9 321 | 633 |
| 1971 | 9 656 | 751 |
| 1972 | 10 414 | 1 138 |
| 1973 | 11 193 | 1 322 |
| 1974 | 11 506 | 1 549 |
| 1975 | 12 207 | 1 370 |
| 1976 | 11 968 | 1 399 |
| 1977 | 12 138 | 1 533 |
| 1978 | 12 597 | 1 674 |
| 1979 | 13 014 | 1 843 |
| 1980 | 13 005 | 1 918 |
| 1981 | 12 607 | 1 990 |
| 1982 | 11 983 | 1 904 |
| 1983 | 11 749 | 2 046 |
| 1984 | 11 859 | 2 482 |

Sources: Ministry of Revenue and Statistics Canada (45-004) and Ministry of Energy




*Sources : Ministry of Revenue and Statistics Canada (45-004)*

NOTE: Consumption for November and December of 1983 has been estimated

**Figure 1.11/ Motor Gasoline and Diesel Fuel Consumption, Ontario, 1970-1984**

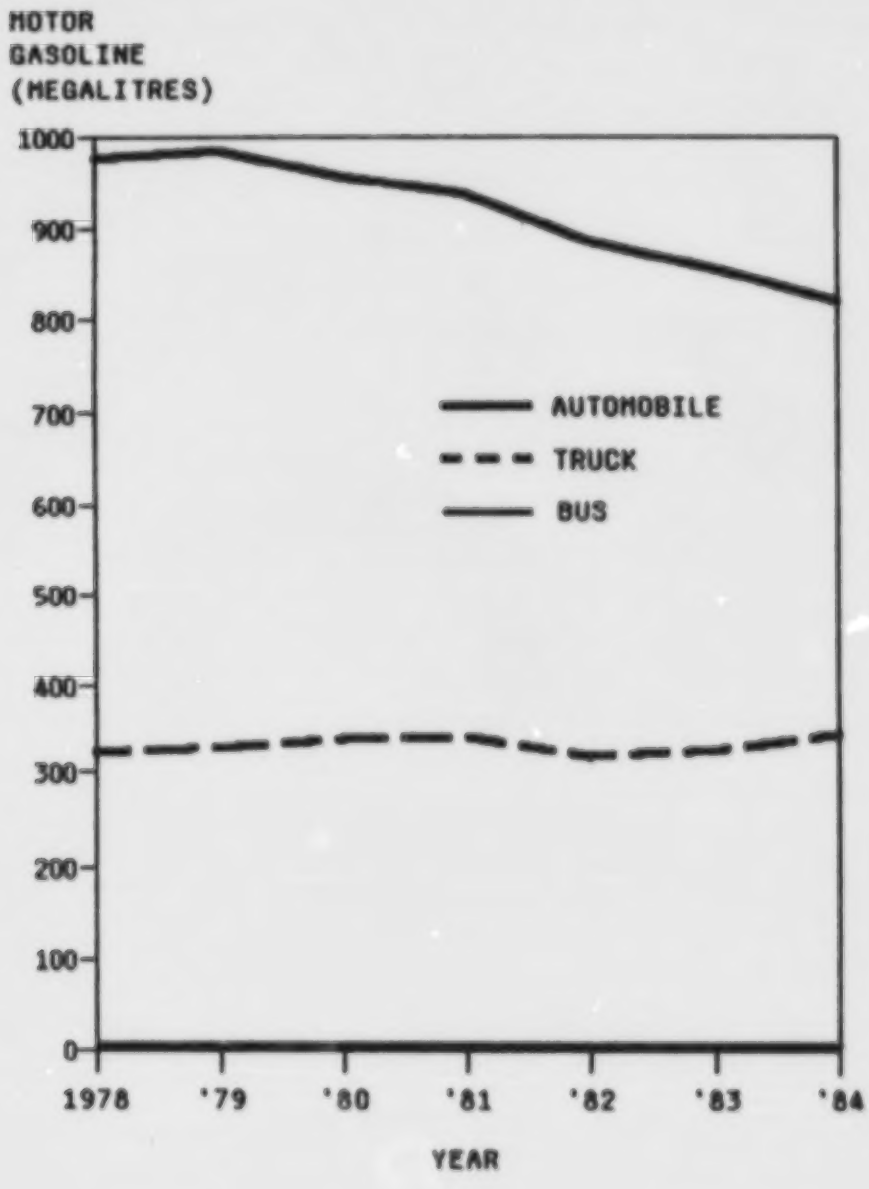
## 1.12/ Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984

While the consumption of motor gasoline by trucks and buses increases slightly each year, the automobile sector has decreased its consumption by 16% from 1978 to 1984. This decrease can be attributed to increased fuel efficiency and fuel conservation awareness.

**Table 1.12/ Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984**

| Year | BUS (megalitres) | TRUCK (megalitres) | AUTOMOBILES (megalitres) |
|---|---|---|---|
| 1978 | 6.46 | 322 | 976 |
| 1979 | 6.54 | 328 | 984 |
| 1980 | 6.59 | 336 | 957 |
| 1981 | 6.77 | 339 | 938 |
| 1982 | 6.70 | 319 | 887 |
| 1983 | 6.86 | 324 | 857 |
| 1984 | 7.12 | 343 | 821 |

Source: Ministry of Energy




*Source : Ministry of Energy*

**Figure 1.12/ Motor Gasoline Consumption by Transportation Mode, Ontario, 1978-1984**

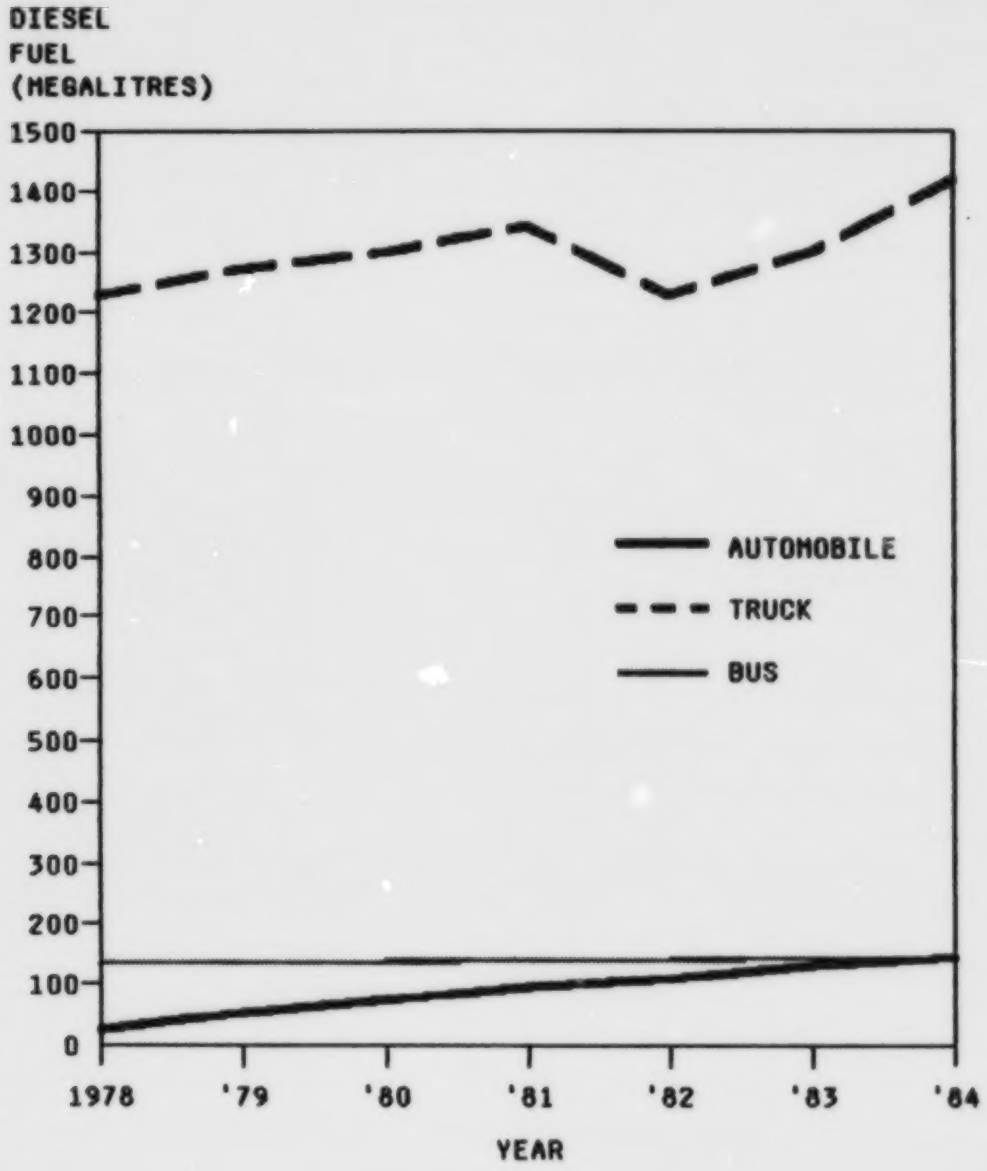
## 1.13/ Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984

All modes of transportation increased their diesel fuel consumption, but automobiles showed the largest increase with a jump of 434 from 1978 to 1984. Increasd awareness of diesel fuel as an alternative to petroleum resulted in increased diesel fuel consumption.

**Table 1.13/ Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984**

| YEAR | BUS (megalitres) | TRUCK (megalitres) | AUTOMOBILES (megalitres) |
|---|---|---|---|
| 1978 | 135 | 1230 | 27.4 |
| 1979 | 136 | 1270 | 52.1 |
| 1980 | 137 | 1300 | 72.4 |
| 1981 | 141 | 1340 | 95.6 |
| 1982 | 140 | 1230 | 111.0 |
| 1983 | 143 | 1300 | 133.0 |
| 1984 | 146 | 1417 | 146.4 |

Source: Ministry of Energy




*Source : Ministry of Energy*

**Figure 1.13/ Diesel Fuel Consumption by Transportation Mode, Ontario, 1978-1984**

## 1.14/ Ontario's Regular Leaded Fuel Prices, Nominal and Real, 1971-1984

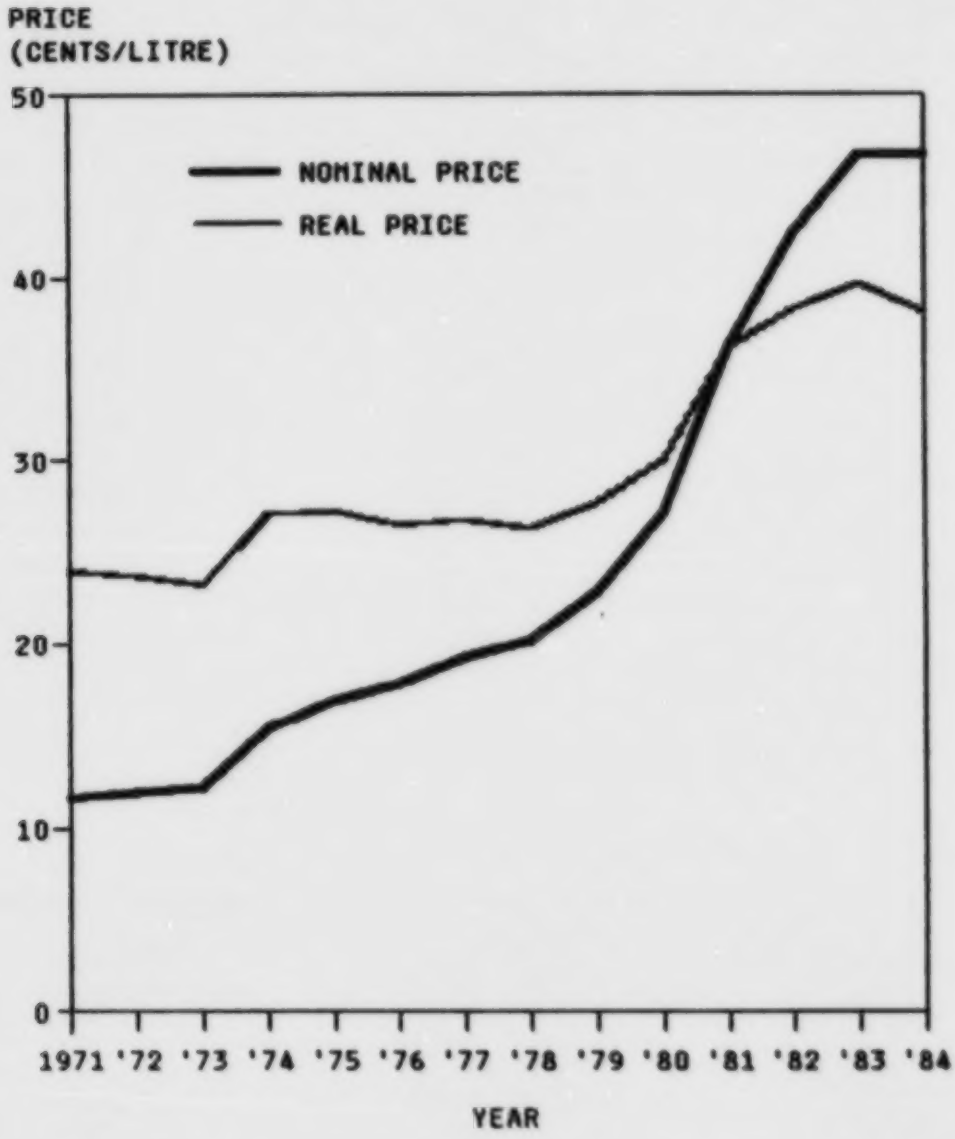
The nominal or actual price of motor gasoline in Ontario has increased by more than 300% since 1971. The increase in the real price of motor gasoline is less (59.1%) when the annual consumer price index or the inflation rate is taken into account. However, the real increase warrants the extensive use of fuel conservation measures.

**Table 1.14/ Ontario's Regular Leaded Fuel Prices, Nominal and Real 1971-1984**

| YEAR | NOMINAL PRICE (cents/litre) | PRICE INDEX (1981=100) | REAL PRICE* (cents/litre) |
|---|---|---|---|
| 1971 | 11.5 | 48.0 | 24.0 |
| 1972 | 11.8 | 49.8 | 23.7 |
| 1973 | 12.1 | 52.1 | 23.2 |
| 1974 | 15.3 | 56.4 | 27.1 |
| 1975 | 16.9 | 61.9 | 27.2 |
| 1976 | 17.8 | 67.3 | 26.5 |
| 1977 | 19.3 | 72.2 | 26.8 |
| 1978 | 20.2 | 76.6 | 26.3 |
| 1979 | 22.8 | 82.5 | 27.6 |
| 1980 | 27.1 | 90.2 | 30.0 |
| 1981 | 36.2 | 100.0 | 36.2 |
| 1982 | 42.4 | 110.8 | 38.3 |
| 1983 | 46.8 | 117.7 | 39.8 |
| 1984 | 46.8 | 122.3 | 38.2 |

Sources: Ministry of Energy and Statistics Canada (62-001)

* NOTE: $\text{Real Price} = \frac{\text{Nominal Price}}{\text{Price Index}} \times 100$




*Sources : Ministry of Energy and Statistics Canada (62-001)*

**Figure 1.14/ Ontario's Regular Leaded Fuel Prices, Nominal and Real, 1971-1984**

**1.15/ Ontario's Propane Fuel Prices, Nominal and Real, 1981-1984**

The nominal or actual price of propane fuel has increased by 26% since 1981. The increase in the real price of propane, on the other hand, has been only 3% since 1981, when the annual consumer price index or the inflation rate is taken into account. Despite the difference between the nominal and real fuel prices, Propane price increases have been consistantly lower than those of gasoline fuel.

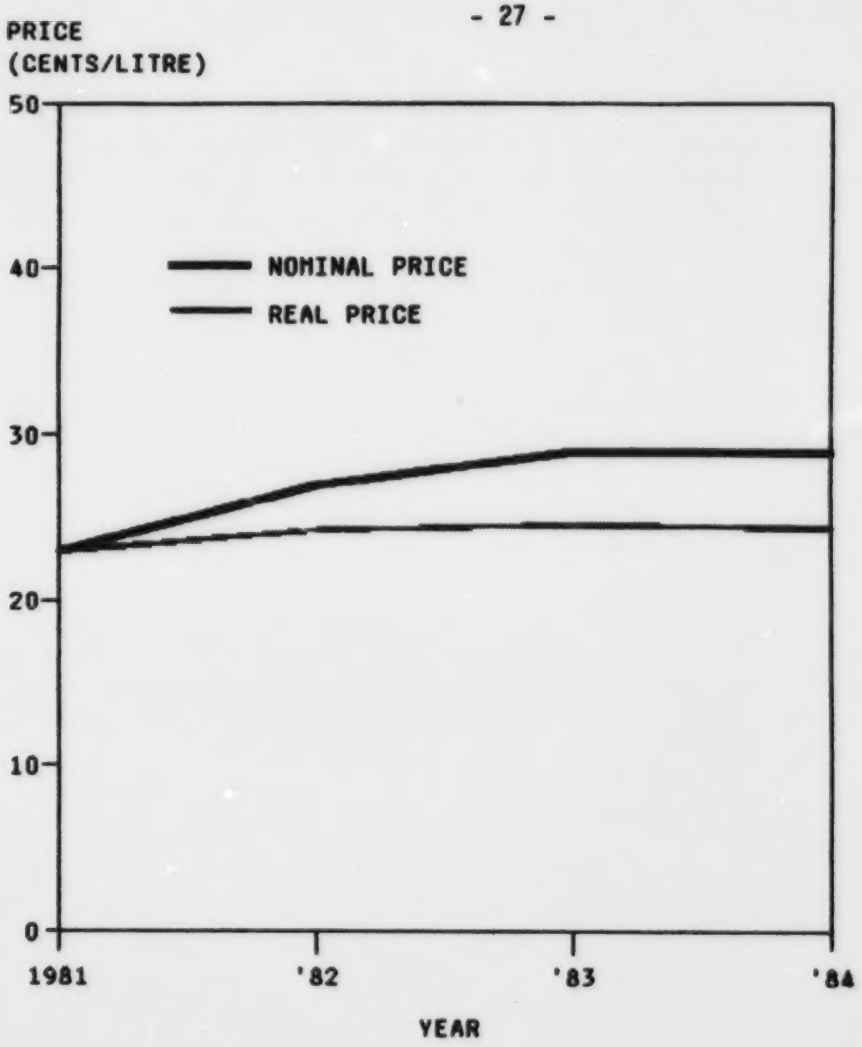
**Table 1.15/ Ontario's Propane Fuel Prices, Nominal and Real, 1981-1984**

| YEAR | NOMINAL PRICE[1] (cents/litre) | PRICE INDEX (1981=100) | REAL PRICE* (cents/litre) |
|---|---|---|---|
| 1981 | 22.9 | 100.0 | 22.9 |
| 1982 | 26.9 | 110.8 | 24.3 |
| 1983 | 28.9 | 117.7 | 24.6 |
| 1984 | 28.9 | 122.3 | 24.4 |

1 prices represent year end value and are the prices to commercial customers at distribution pumps.

* Note: $\text{Real Price} = \frac{\text{Normal Price}}{\text{Price Index}} \times 100$

Source: E.M.R., Petroleum Products Marketing Division



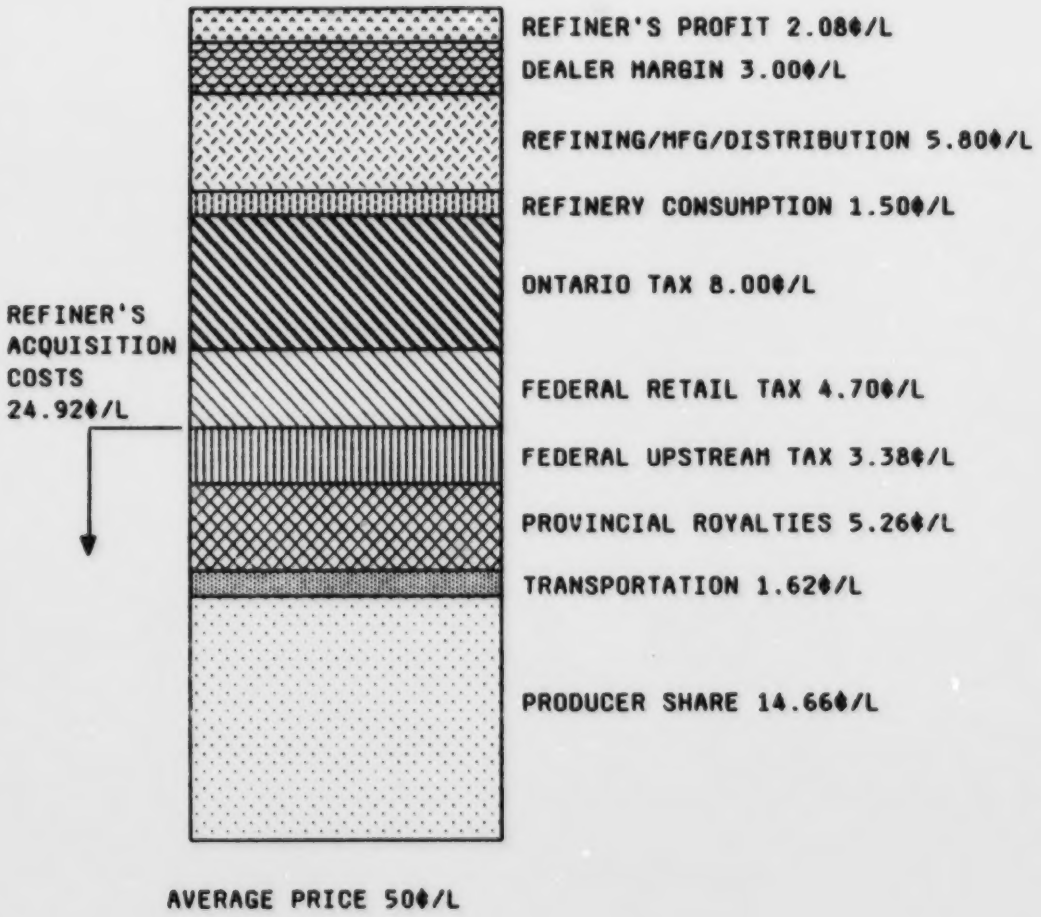

*Sources : EMR, Petroleum Products Marketing Division*

**Figure 1.15/ Ontario's Propane Fuel Prices, Nominal and Real, 1981-1984**

**1.16/ Breakdown of Average Leaded Gasoline Prices, Ontario, July 1985**

Based on an average pump price of 50.0 cents per litre of regular leaded motor gasoline in July 1985, the component costs of a litre of gasoline are indicated in Figure 1.15. Federal and provincial taxes and royalties account for 43% of the retail price of gasoline. This is down from 58% in the winter of 1983. The decline was caused by decreases in federal

charges and royalties. It is important to note that this disaggregation of costs is highly dependent upon the categorization of the components. In some sources, the Petroleum Compensation and Canadian Ownership charges are not represented as taxes because these revenues are used to balance imported oil prices with Canadian price to increase Canadian ownership in petroleum sector, respectively. Also, the refiner's margin will vary by company and year, depending on the individual taxation deferment plan of the oil company.




*Source : Ministry of Energy*

**Figure 1.16/ Breakdown of Average Leaded Gasoline Prices, Ontario, July 1985**

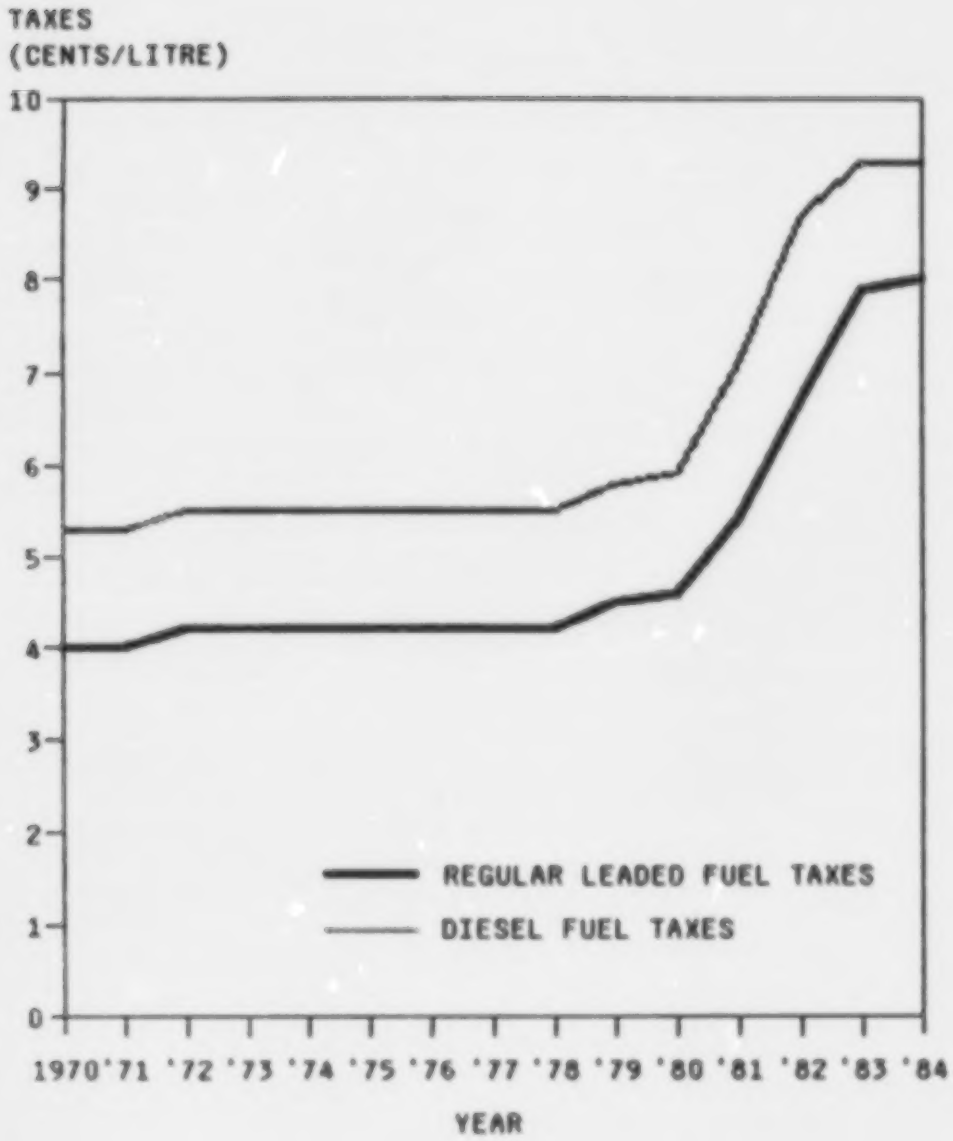
## 1.17/ Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel Fuel, 1970-1984

During the mid-1970's, when motor gasoline and diesel fuel prices were increasing rapidly, the Ontario government fuel taxes remained stable. When the ad valorum fuel tax rate (the fuel tax charged is proportional to the fuel price and is adjusted quarterly; 20% for motor gasoline and 27% for diesel fuel) was introduced in 1980, fuel taxes increased at the same rate as retail fuel prices.

**Table 1.17/ Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel Fuel, 1970-1984**

| YEAR | REGULAR LEADED GASOLINE TAXES (cents/litre) | DIESEL FUEL TAXES (cents/litre) |
|---|---|---|
| 1970 | 4.0 | 5.3 |
| 1971 | 4.0 | 5.3 |
| 1972 | 4.2 | 5.5 |
| 1973 | 4.2 | 5.5 |
| 1974 | 4.2 | 5.5 |
| 1975 | 4.2 | 5.5 |
| 1976 | 4.2 | 5.5 |
| 1977 | 4.2 | 5.5 |
| 1978 | 4.2 | 5.5 |
| 1979 | 4.5 | 5.8 |
| 1980 | 4.6 | 5.9 |
| 1981 | 5.4 | 7.1 |
| 1982 | 6.7 | 8.7 |
| 1983 | 7.9 | 9.3 |
| 1984 | 8.0 | 9.3 |

Sources: Ministry of Revenue and Ministry of Treasury and Economics




*Sources : Ministry of Revenue and*
*Ministry of Treasury and Economics*

**Figure 1.17/ Ontario Government Fuel Taxes, Regular Leaded Gasoline and Diesel Fuel, Ontario, 1970-1984**

## 1.18/ Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario 1970-1984

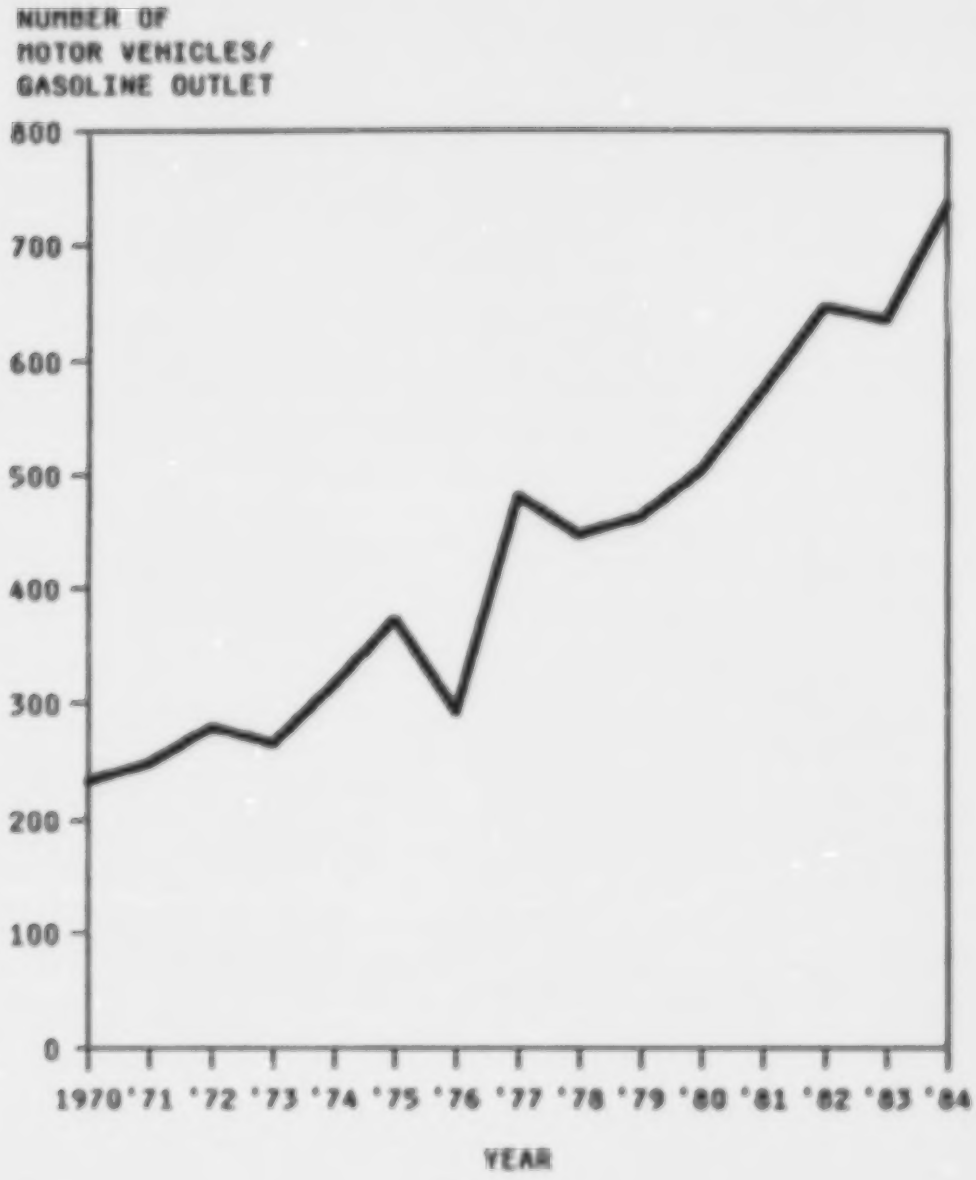
Since 1970, there has been a decline in the number of motor gasoline refuelling stations, from 13 000 to 8 100 (a decline of 39%).

The number of registered motor vehicles has increased by 95% since 1970. These two diverging patterns have resulted in an increase of 218% for the number of cars per refuelling station.

**Table 1.18/ Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario, 1970-1984**

| YEAR | NUMBER OF GASOLINE OUTLETS | MOTOR VEHICLES (thousand) | NO. OF VEHICLE PER OUTLET |
|---|---|---|---|
| 1970 | 13 206 | 3 048 | 231 |
| 1971 | 13 351 | 3 328 | 249 |
| 1972 | 12 190 | 3 386 | 278 |
| 1973 | 13 566 | 3 583 | 264 |
| 1974 | 11 838 | 3 743 | 316 |
| 1975 | 10 500 | 3 912 | 372 |
| 1976 | 14 000 | 4 090 | 292 |
| 1977 | 9 000 | 4 340 | 482 |
| 1978 | 10 000 | 4 475 | 447 |
| 1979 | 10 000 | 4 639 | 464 |
| 1980 | 10 000 | 5 022 | 502 |
| 1981 | 8 816 | 5 051 | 573 |
| 1982 | 8 202 | 5 295 | 646 |
| 1983 | 8 083 | 5 136 | 635 |
| 1984 | 8 118 | 5 955 | 734 |

Source: Ministry of Transportation and Communications, Statistics Canada and Ministry of Consumer and Commercial Relations - Fuel Safety Branch




*Sources : Ministry of Transportation and Communications and*
*Statistics Canada (53-219), and*
*Ministry of Consumer and Commercial Relations*

**Figure 1.18/ Number of Registered Motor Vehicles in Relation to the Number of Gasoline Outlets, Ontario, 1970-1984**

# SECTION TWO:

# HIGHWAY MODES

## 2.1/ AUTOMOBILES

### 2.1.1/ Number of Registered Passenger Vehicles, Ontario, 1970-1984

Since 1970, the number of passenger vehicles registered in Ontario has increased by 64%. Given this increase in the automobile stock it is surprising that motor gasoline consumption is on the decline. An increase in awareness of the importance of fuel conservation and the use of fuel efficient vehicles may account for this apparent discrepancy.

Beginning in 1983, all vehicle owners were required to renew their vehicle licenses on or before their date of birth. This change in licensing renewal procedures accounts for the dramatic drop in vehicle registrations which occurred in 1983.

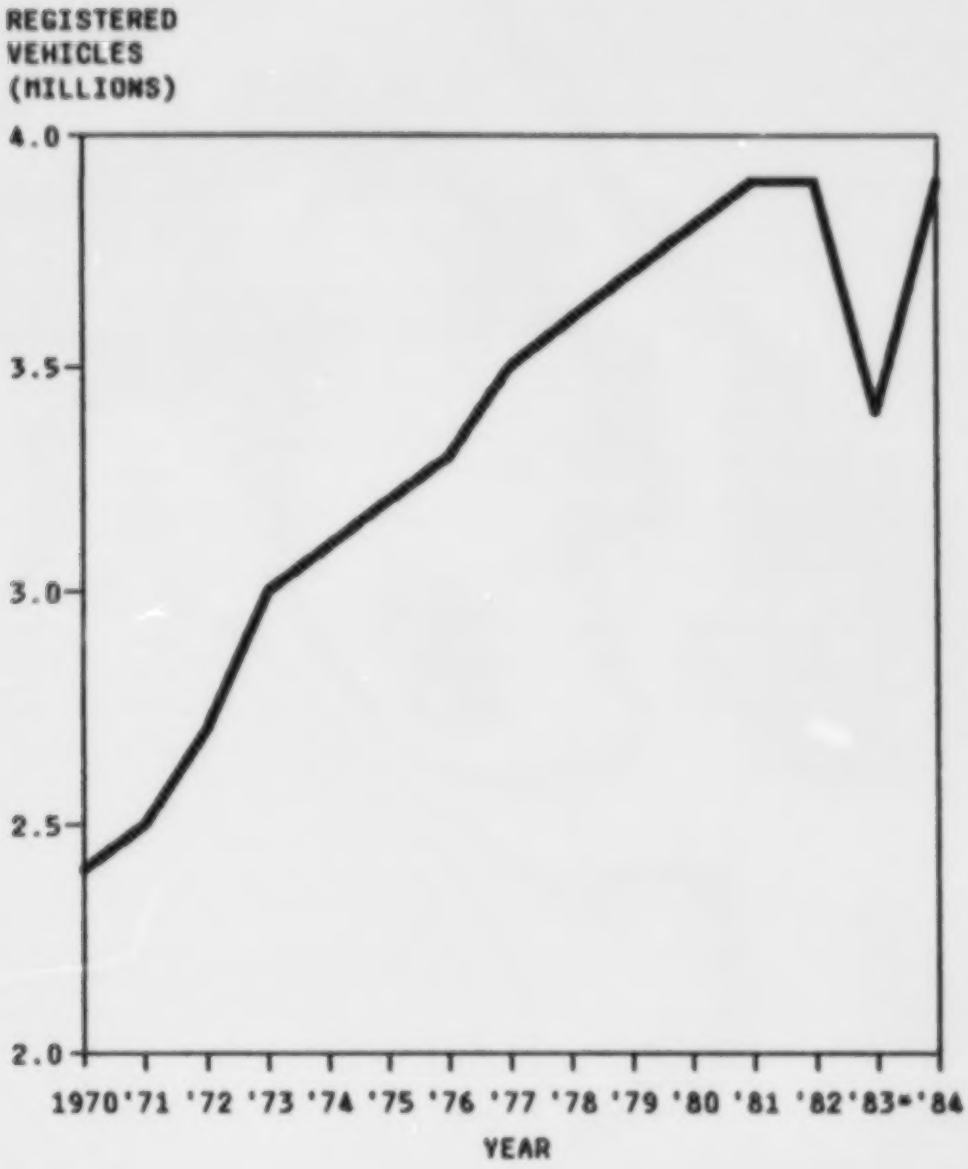
**Table 2.1.1/ Number of Registered Passenger Vehicles, Ontario, 1970-1984**

| YEAR | NUMBER OF VEHICLES (thousands) |
|---|---|
| 1970 | 2376 |
| 1971 | 2497 |
| 1972 | 2662 |
| 1973 | 3002 |
| 1974 | 3111 |
| 1975 | 3225 |
| 1976 | 3342 |
| 1977 | 3490 |
| 1978 | 3630 |
| 1979 | 3725 |
| 1980 | 3794 |
| 1981 | 3867 |
| 1982 | 3879 |
| * 1983 | 3420 |
| 1984 | 3905 |

* Note: 1983 figures are low due to change in vehicle licensing procedures

Note: Includes any automobile or light truck not registered as a commercial vehicle.

Source: Ministry of Transportation and Communications




*Source : Ministry of Transportation and Communications*

* NOTE: 1983 figures are low due to a change in vehicle licensing procedures.

NOTE: Includes any automobile or light truck not registered as a commercial vehicle.

**Figure 2.1.1/ Number of Registered Passenger Vehicles, Ontario, 1970-1984**

## 2.1.2/ Passenger Car Registration by Number of Cylinders, Ontario, 1970-1984

The total number of vehicle registrations increased by 63% from 1970 to 1984. Four-cylinder vehicles had the largest increase in registrations with 315%. Six-cylinder vehicle registrations have increased by a substantially lower margin of 15%. Eight-cylinder vehicle registrations have also increased overall (33%) despite a downward trend in registrations from 1980-1984. The pattern from 1970 onward has been to drive smaller and more fuel efficient cars; consequently, there are proportionally fewer eight-cylinder vehicles being sold.

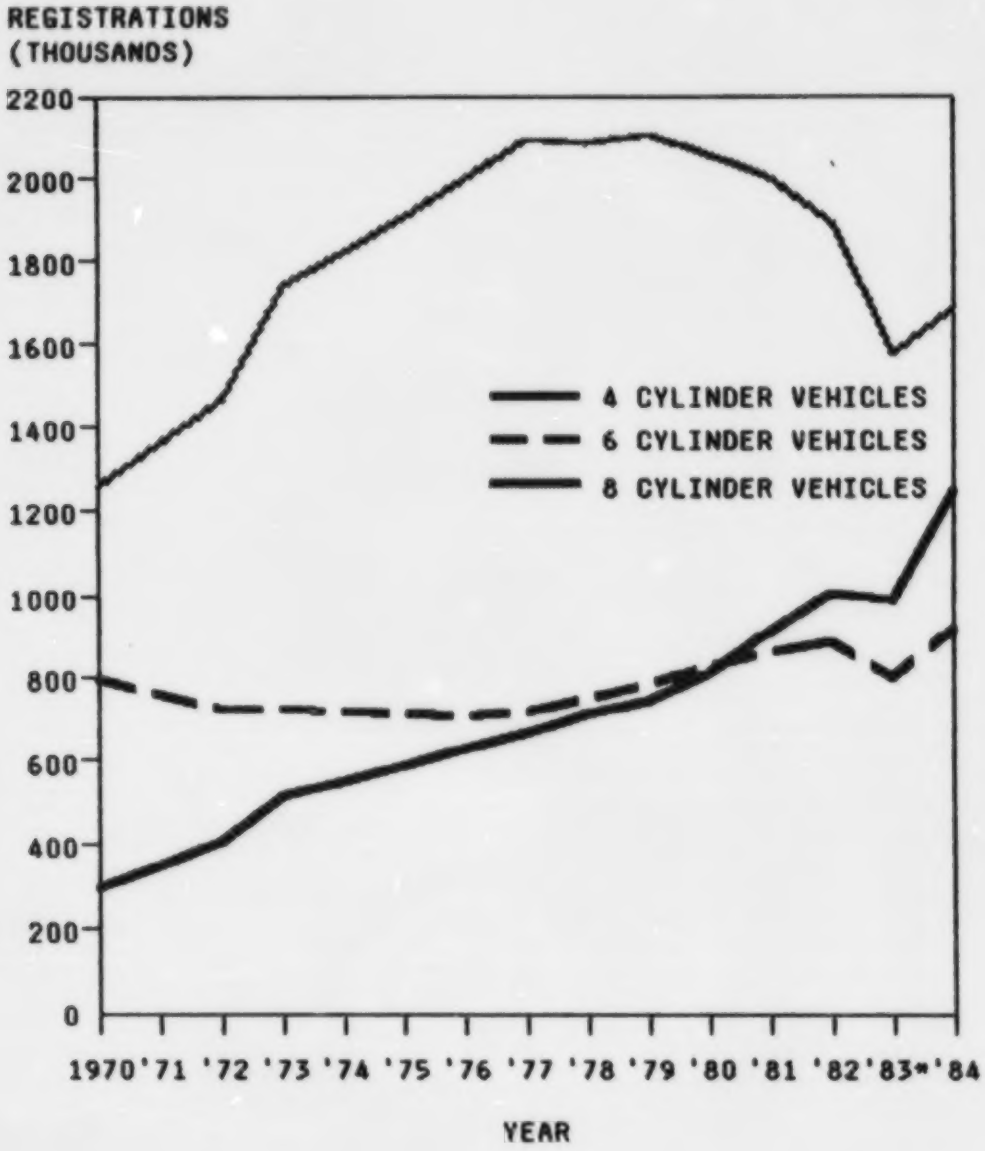
**Table 2.1.2/ Passenger Car Registrations by Number of Cylinders, Ontario, 1970-1984**

| YEAR | 4 CYLINDERS (thousands) | 6 CYLINDERS (thousands) | 8 CYLINDERS* (thousands) |
|---|---|---|---|
| 1970 | 303 | 799 | 1266 |
| 1971 | 355 | 761 | 1372 |
| 1972 | 405 | 724 | 1474 |
| 1973 | 520 | 728 | 1741 |
| 1974 | 556 | 722 | 1829 |
| 1975 | 593 | 714 | 1913 |
| 1976 | 632 | 706 | 2000 |
| 1977 | 669 | 722 | 2094 |
| 1978 | 714 | 750 | 2090 |
| 1979 | 748 | 783 | 2113 |
| 1980 | 809 | 828 | 2068 |
| 1981 | 915 | 864 | 2006 |
| 1982 | 1009 | 889 | 1900 |
| **1983 | 993 | 803 | 1583 |
| 1984 | 1256 | 918 | 1689 |

** Note: 1983 figures are low due to change in vehicle licensing renewal procedures.

* Note: Includes engines 6.5 L or larger.

Source: Ministry of Transportation and Communications.




*Source : Ministry of Transportation and Communications*

* NOTE: 1983 figures are low due to a change in vehicle licensing renewal procedures.

**Figure 2.1.2/ Passenger Car Registrations by Number of Cylinders, Ontario, 1970-1984**

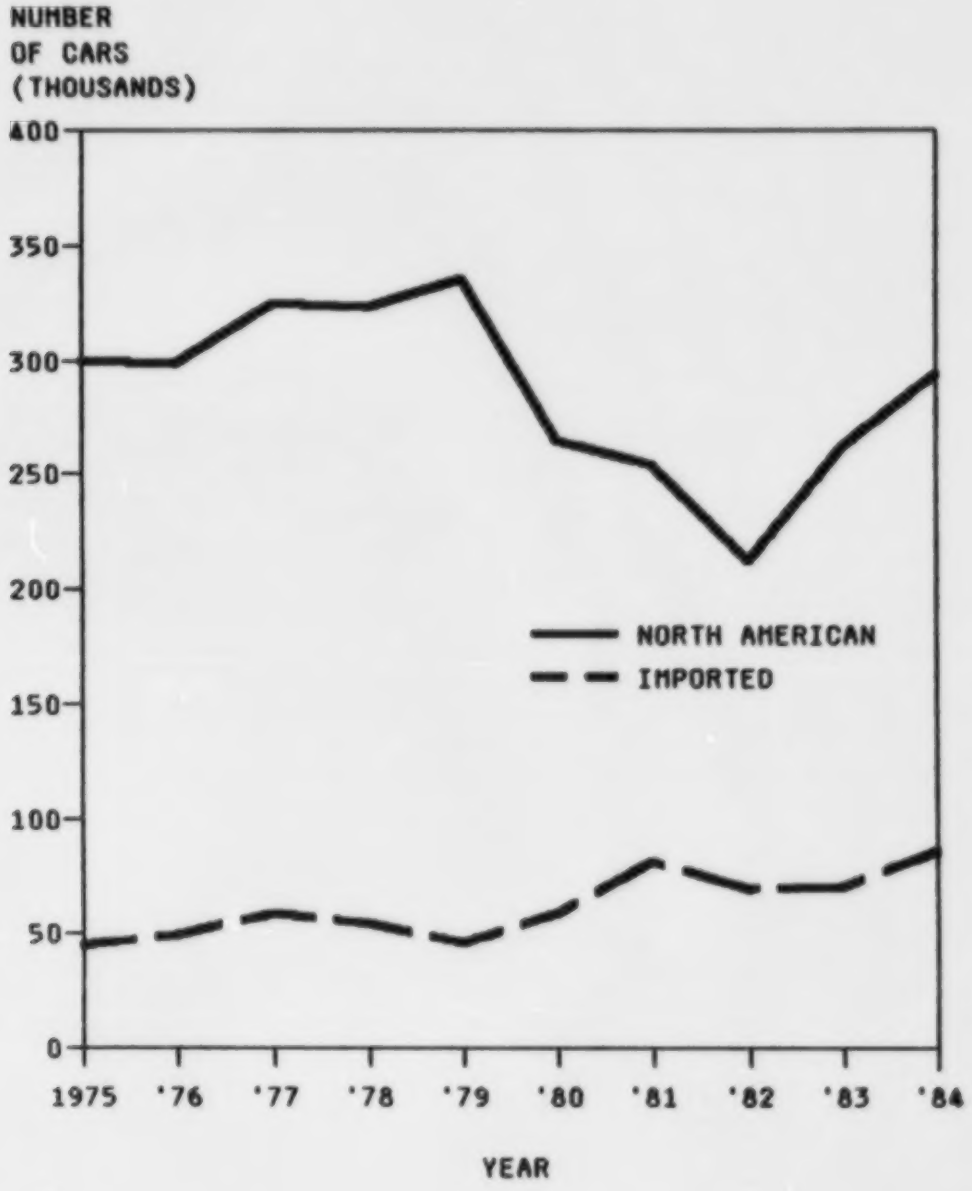
## 2.1.3/ New Car Sales, North America and Imported, Ontario, 1975-1984

1984 new car sales increased by 14% over sales in 1983 and were the highest since 1979. Sales reached a decade low in 1982 and it was during this time that imports gained their largest share of the new car market at 25%. Imported car sales increased by 2% in 1983. The enhanced fuel efficiency of North American cars contributed greatly to the dramatic increase in North American car sales over imported car sales in recent years.

**Table 2.1.3/ New Car Sales, North America and Imported, Ontario, 1975-1984**

| Year | NORTH AMERICAN (thousands) | IMPORTED (thousands) | TOTAL (thousands) |
|---|---|---|---|
| 1975 | 300 | 45 | 345 |
| 1976 | 298 | 49 | 348 |
| 1977 | 324 | 59 | 383 |
| 1978 | 323 | 54 | 377 |
| 1979 | 334 | 46 | 381 |
| 1980 | 264 | 58 | 322 |
| 1981 | 254 | 81 | 335 |
| 1982 | 212 | 69 | 281 |
| 1983 | 262 | 70 | 332 |
| 1984 | 294 | 85 | 379 |

Source: R.L. Polk & Co. Ltd.




*Source : R.L. Polk & Co. Ltd.*

**Figure 2.1.3/ New Car Sales, North American and Imported, Ontario, 1975-1984**

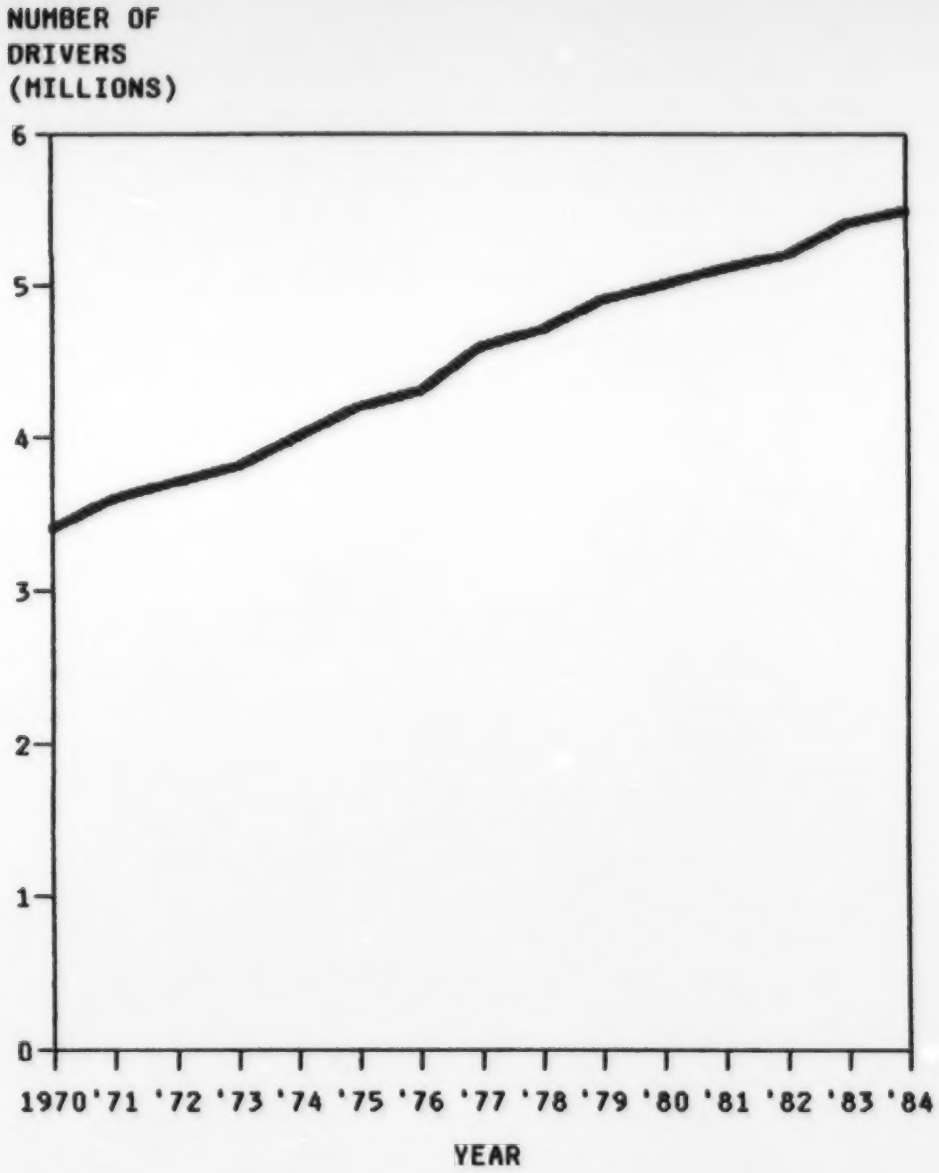
## 2.1.4./ Total Number of Licensed Drivers, Ontario, 1970-1984

From 1970 to 1984, the total number of licensed drivers in Ontario has increased steadily from 3.4 million to 5.5 million; an increase of 60% in the total number of licensed drivers in Ontario.

**Table 2.1.4./ Total Number of Licensed Drivers, Ontario, 1970-1984**

| YEAR | NUMBER OF VEHICLES (thousands) |
|---|---|
| 1970 | 3443 |
| 1971 | 3563 |
| 1972 | 3689 |
| 1973 | 3842 |
| 1974 | 3973 |
| 1975 | 4161 |
| 1976 | 4316 |
| 1977 | 4563 |
| 1978 | 4726 |
| 1979 | 4859 |
| 1980 | 4994 |
| 1981 | 5123 |
| 1982 | 5247 |
| 1983 | 5380 |
| 1984 | 5514 |

Source: Statistics Canada (53-219) and Ministry of Transportation and Communications.




*Sources : Statistics Canada (53-219) and*
*Ministry of Transportation and Communications*

**Figure 2.1.4/ Total Number of Licensed Drivers, Ontario, 1970-1984**

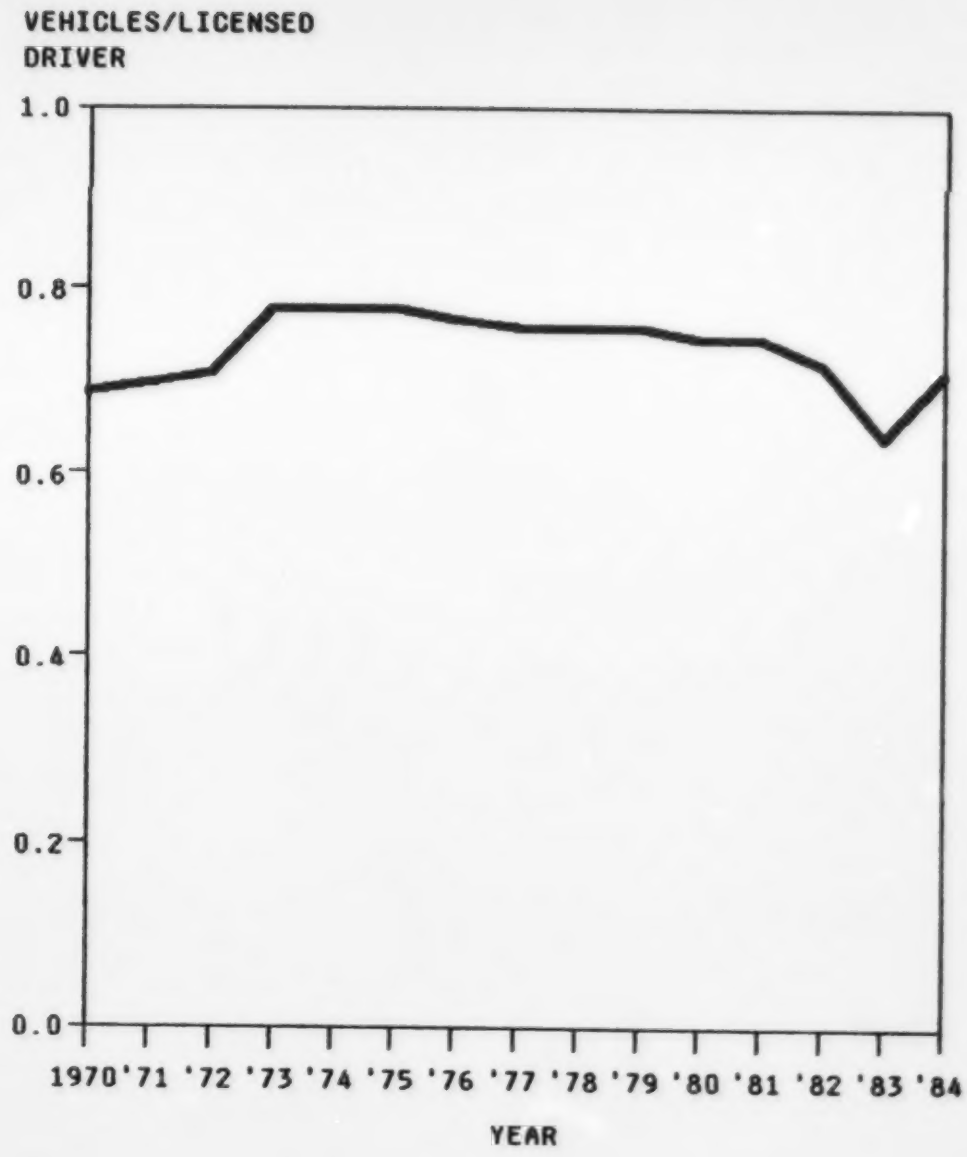
## 2.1.5/ Number of Cars Per Licensed Driver, Ontario, 1970-1984

Since 1973, the number of cars per licensed driver has steadily declined. Although this decrease indicates that annual kilometres per vehicle should increase, the annual travel per vehicle has actually decreased from 1975. Therefore, more drivers are travelling less, in relatively fewer cars with more passengers. A slight increase in the number of cars per licensed driver in 1984 may be the result of improved economic conditions; people began buying cars once again.

**Table 2.1.5/ Number of Cars Per Licensed Driver, Ontario, 1970-1984**

| YEAR | PASSENGER VEHICLES (thousands) | LICENSED DRIVERS (thousands) | CARS/DRIVER |
|---|---|---|---|
| 1970 | 2376 | 3443 | 0.69 |
| 1971 | 2497 | 3563 | 0.70 |
| 1972 | 2612 | 3689 | 0.71 |
| 1973 | 3002 | 3842 | 0.78 |
| 1974 | 3111 | 3973 | 0.78 |
| 1975 | 3225 | 4161 | 0.78 |
| 1976 | 3342 | 4316 | 0.77 |
| 1977 | 3490 | 4563 | 0.76 |
| 1978 | 3597 | 4726 | 0.76 |
| 1979 | 3692 | 4859 | 0.76 |
| 1980 | 3752 | 4994 | 0.75 |
| 1981 | 3831 | 5123 | 0.75 |
| 1982 | 3843 | 5371 | 0.72 |
| 1983 | 3420 | 5380 | 0.64 |
| 1984 | 3905 | 5514 | 0.71 |

Sources: Ministry of Transportation and Communications and Statistics Canada (53-219)




*Sources : Ministry of Transportation and Communications and Statistics Canada (53-219)*

**Figure 2.1.5/ Number of Cars Per Licensed Driver, Ontario, 1970-1984**

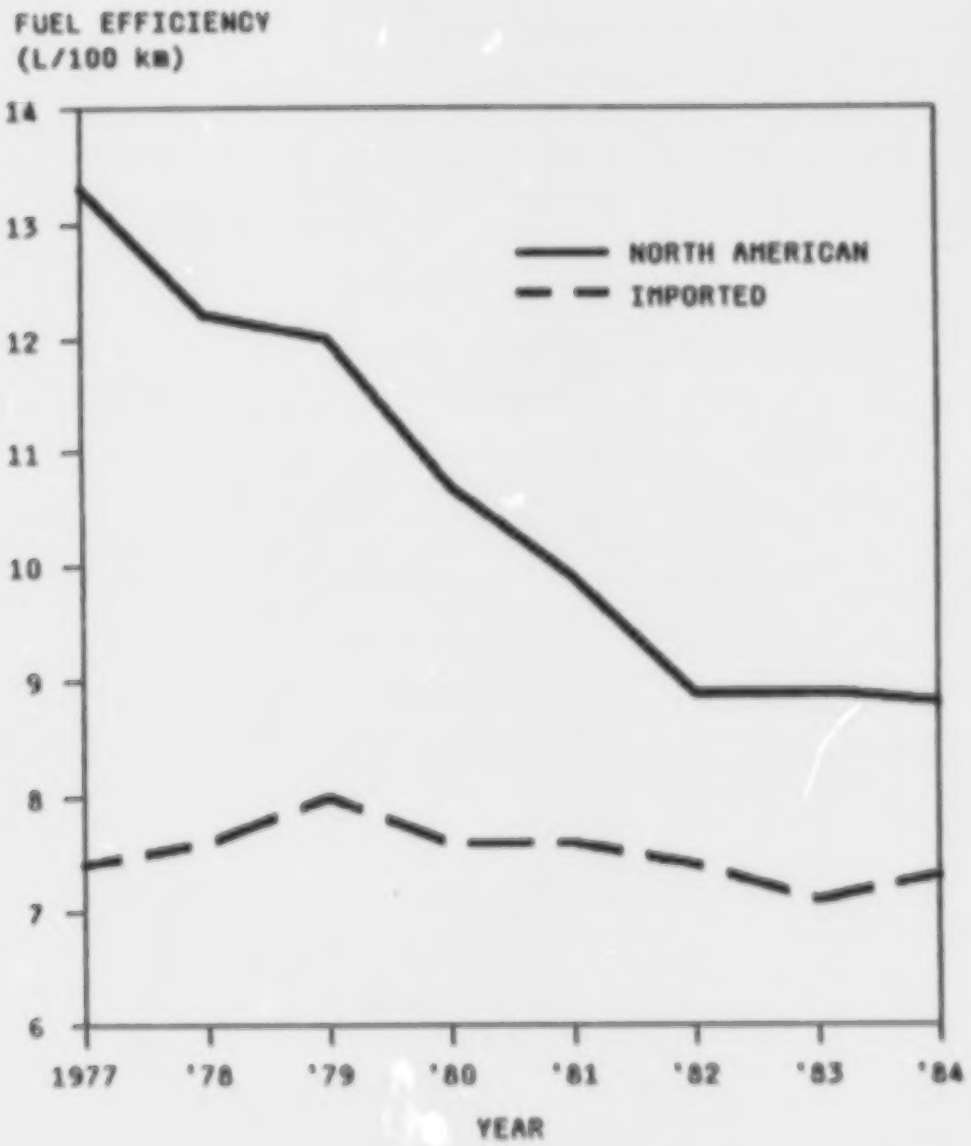
## 2.1.6/ Average Fuel Efficiency of North American and Imported Automobiles, Ontario, 1977-1984

It is well known that the fuel efficiency of imported automobiles traditionally has been better than that of domestically-produced cars. In 1977, the average fuel efficiency of the imported auto fleet was 64% better than the comparable domestic fleet. What is surprising, however, is that in 1984 (model-year of automobiles) this gap has been narrowed to only a 20% difference in fuel efficiency between the two fleets.

**Table 2.1.6/ Average Fuel Efficiency of North American and Imported Automobiles, Ontario 1977-1984**

| YEAR | NORTH AMERICAN (L/100 km) | IMPORTED (L/100 km) |
|---|---|---|
| 1977 | 13.3 | 7.4 |
| 1978 | 12.2 | 7.6 |
| 1979 | 12.0 | 8.0 |
| 1980 | 10.7 | 7.6 |
| 1981 | 9.9 | 7.6 |
| 1982 | 8.9 | 7.4 |
| 1983 | 8.9 | 7.1 |
| 1984 | 8.8 | 7.3 |

Source: Transport Canada




*Source : Transport Canada*

Figure 2.1.6/ Average Fuel Efficiency of North American and Imported Automobiles, Ontario, 1977-1984

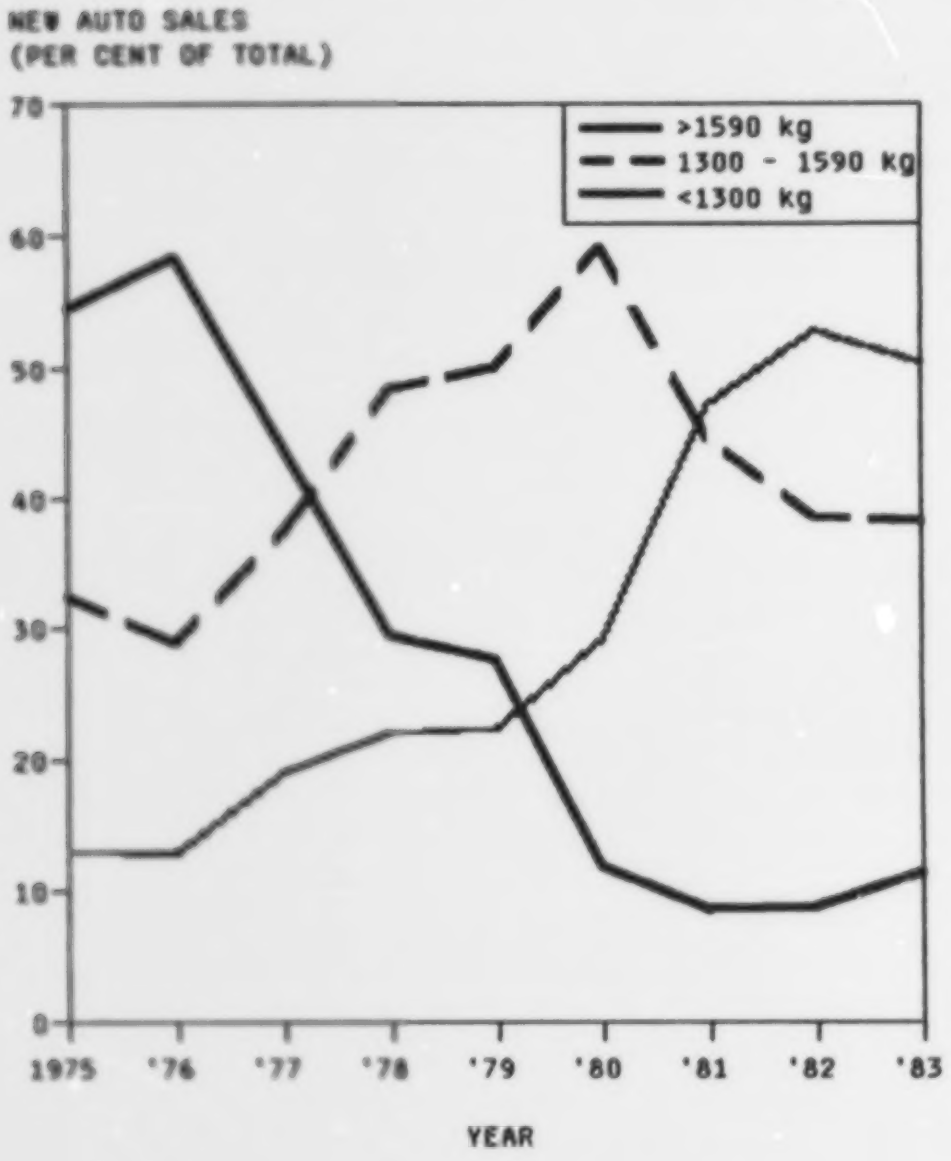
## 2.1.7/ Sales-Weighted Class Distribution of New Automobiles, Ontario, 1975-1983

One of the most common methods used to achieve greater fuel efficiency is reduction of the average curb weight of the fleet. Although all weight categories enjoyed increased sales in 1983, the heaviest weight category increased its market share. This increase is not likely to continue. Furthermore, the possibility of the heavy automobile regaining the market share it held in 1976 is extremely doubtful.

**Table 2.1.7/ Sales-Weighted Class Distribution of New Automobiles, Ontario, 1975-1983**

| NUMBER OF PASSENGER AUTOMOBILES AND PERCENTAGES (in parenthesis) | | | | |
|---|---|---|---|---|
| Year | LESS THAN 1300 kg | 1130-1590 kg | MORE THAN 1590 kg | TOTAL (100%) |
| 1975 | 41 857 (13.1%) | 103 920 (32.4%) | 174 510 (54.5%) | 320 287 |
| 1976 | 44 022 (12.8%) | 99 474 (28.8%) | 201 441 (58.4%) | 344 937 |
| 1977 | 62 984 (19.1%) | 122 810 (37.2%) | 144 230 (43.7%) | 330 024 |
| 1978 | 83 045 (22.1%) | 181 873 (29.5%) | 110 852 (29.5%) | 375 770 |
| 1979 | 85 272 (22.3%) | 191 192 (50.0%) | 105 920 (27.7%) | 382 384 |
| 1980 | 93 433 (29.0%) | 190 410 (59.1%) | 38 340 (11.9%) | 322 182 |
| 1981 | 149 498 (47.0%) | 141 019 (44.4%) | 27 358 ( 8.6%) | 317 875 |
| 1982 | 138 320 (52.8%) | 100 858 (38.5%) | 22 697 ( 8.7%) | 261 875 |
| 1983 | 167 332 (50.4%) | 126 590 (38.1%) | 37 908 (11.4%) | 331 830 |

Source: R.L. Polk & Co. Ltd. and Sanford Evans Vehicle Handbook




*Sources : R.L. Polk & Co. Ltd. and*
*Sandford Evans Motor Vehicle Handbook*

**Figure 2.1.7/ Sales-Weighted Weight Class Distribution of New Automobiles, Ontario, 1975-1983**

## 2.1.8/ Total Vehicle-Kilometres Travelled vs Average Annual Travel Per Vehicle, Ontario, 1970-1984

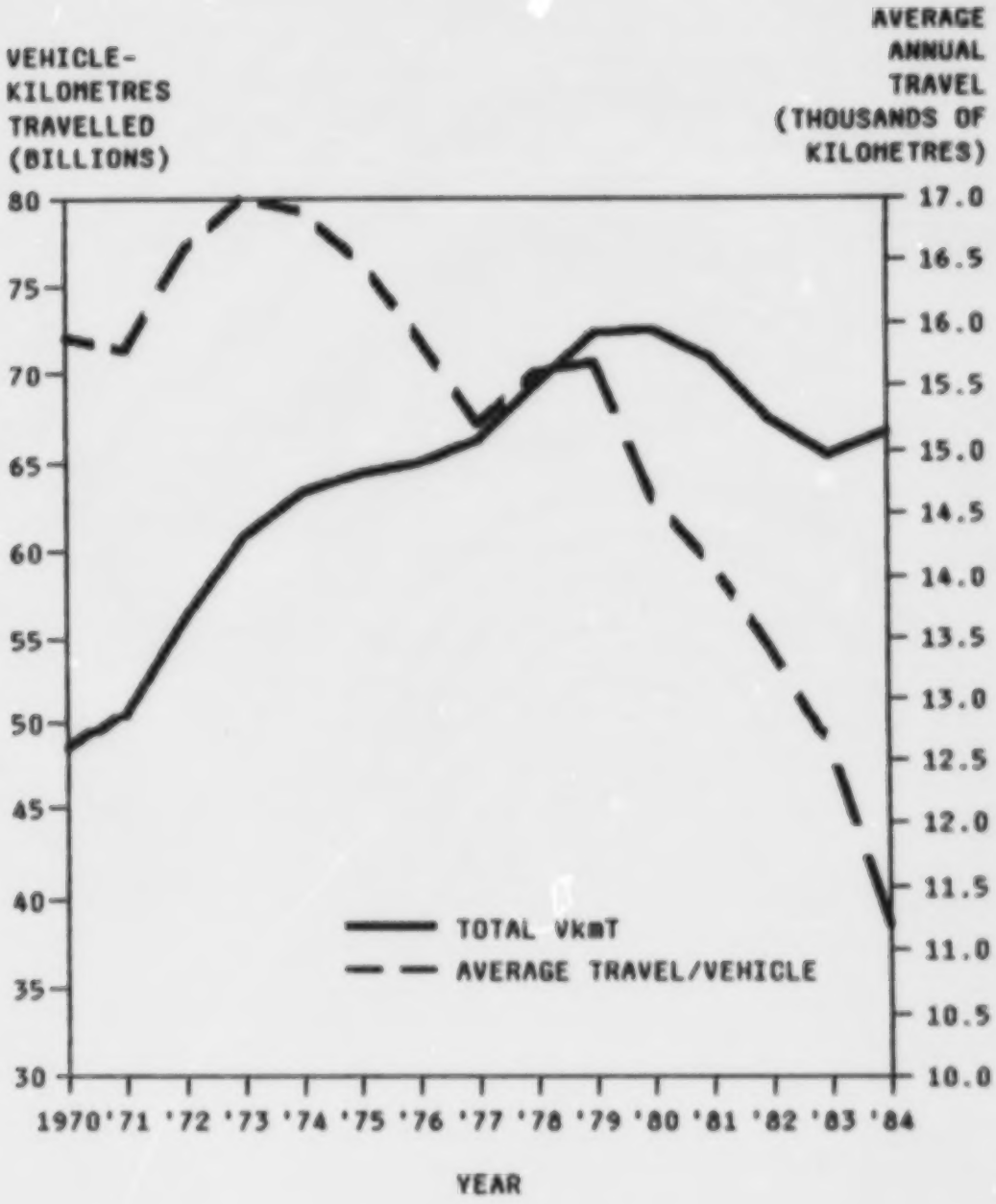
The years 1981 and 1983 marked the first time since 1970 that the total vehicle-kilometres travelled within the province of Ontario declined. Although this change has only occurred in the last four years, the decline could have been forecast to occur as early as the mid-1970's when the average travel per vehicle began to decline by significant amounts. From 1974 to 1984, the average travel per vehicle decreased by 33.9%.

**Table 2.1.8/ Total Vehicle-Kilometres Travelled vs Average Annual Travel Per Vehicle, Ontario, 1970-1984**

| YEAR | TOTAL VEHICLE-KILOMETRES TRAVELLED (millions) | TOTAL NUMBER OF VEHICLES (thousands) | AVERAGE ANNUAL TRAVEL PER VEHICLE (kilometres) |
|---|---|---|---|
| 1970 | 48 367.1 | 3 048 | 15 871 |
| 1971 | 50 566.7 | 3 210 | 15 754 |
| 1972 | 56 132.1 | 3 387 | 16 575 |
| 1973 | 60 812.2 | 3 583 | 16 971 |
| 1974 | 63 434.1 | 3 743 | 16 948 |
| 1975 | 64 422.6 | 3 912 | 16 469 |
| 1976 | 64 947.5 | 4 090 | 15 880 |
| 1977 | 66 190.3 | 4 340 | 15 249 |
| 1978 | 69 317.0 | 4 442 | 15 604 |
| 1979 | 72 161.4 | 4 606 | 15 668 |
| 1980 | 72 491.4 | 4 980 | 14 556 |
| 1981 | 70 906.0 | 5 015 | 14 140 |
| 1982 | 67 360.7* | 5 018 | 13 425 |
| 1983 | 65 358.8 | 5 182 | 12 613 |
| 1984 | 66 722.5 | 5 955 | 11 205 |

*Note: The figures for 1982 are estimated at 5% lower than 1981.

Source: Ministry of Transportation and Communications




*Source : Ministry of Transportation and Communications*

NOTE: The figures for 1982 are estimated at 5% lower than 1981.

Figure 2.1.8/ Total Vehicle-Kilometres Travelled vs. Average Annual Travel Per Vehicle, Ontario, 1970-1984

## 2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1985

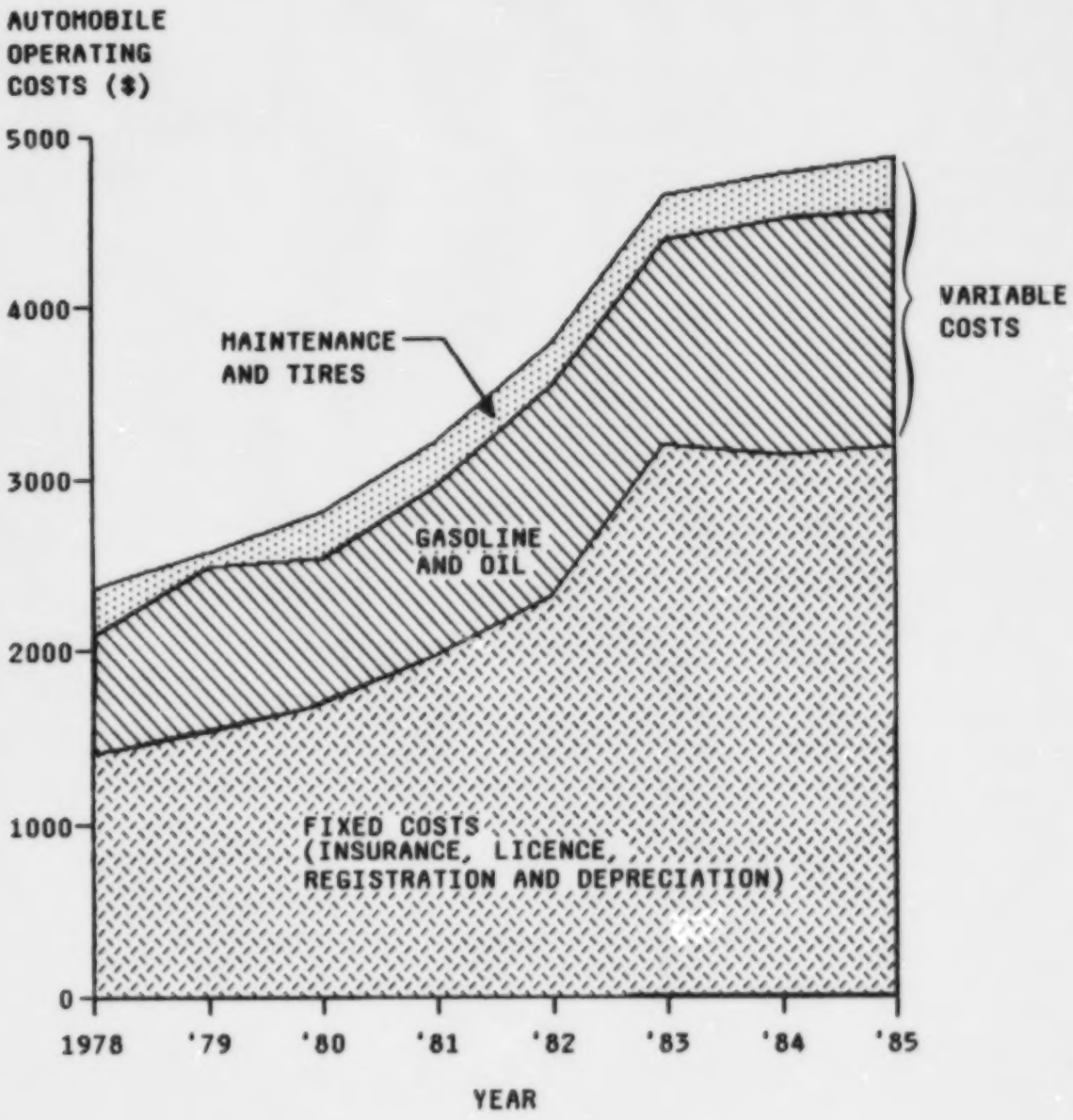
The total cost of operating an "average" automobile in Ontario has risen from $2371 in 1978 to $4867 in 1985, an increase of 100%. Fixed costs dropped by 2% to $3148 in 1984 after an all time high of $3208 in 1983. Despite the decrease, overall fixed costs have increased by 127% since 1978.

Car costs are broken down into two categories, operating (variable) and Ownership (fixed). Variable items are directly related to the geographic location, number of kilometres driven, car usage, and amount of service and report work. Fixed costs, vary from car to car and place to place but change little with the amount and type of driving. Fixed costs include insurance, finance costs, licence and registration fees as well as depreciation of the vehicle.

**Table 2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1985**

| YEAR | TOTAL COST | FIXED PRICE | VARIABLE COST | GASOLINE AND OIL |
|---|---|---|---|---|
| 1978 | $2371 | $1405 | $ 965 | $ 691.50 |
| 1979 | 2571 | 1531 | 1041 | 955.50 |
| 1980 | 2810 | 1694 | 1116 | 840.00 |
| 1981 | 3221 | 1990 | 1231 | 955.50 |
| 1982 | 3783 | 2329 | 1454 | 1209.00 |
| 1983 | 4653 | 3208 | 1445 | 1183.20 |
| 1984 | 4770 | 3148 | 1622 | 1348.80 |
| 1985 | 4867 | 3190 | 1677 | 1358.40 |

Source: Canadian Automobile Association




*Source : Canadian Automobile Association*

NOTE: The above figures are a breakdown of the national average cost figures by Runzheimer and Company. Although the test car varies from year to year, the selected car is considered to be an average size car equipped with standard accessories.

**Figure 2.1.9/ Average Cost of Operating an Automobile in Canada, 1978-1985**

## 2.2/ TRUCKS

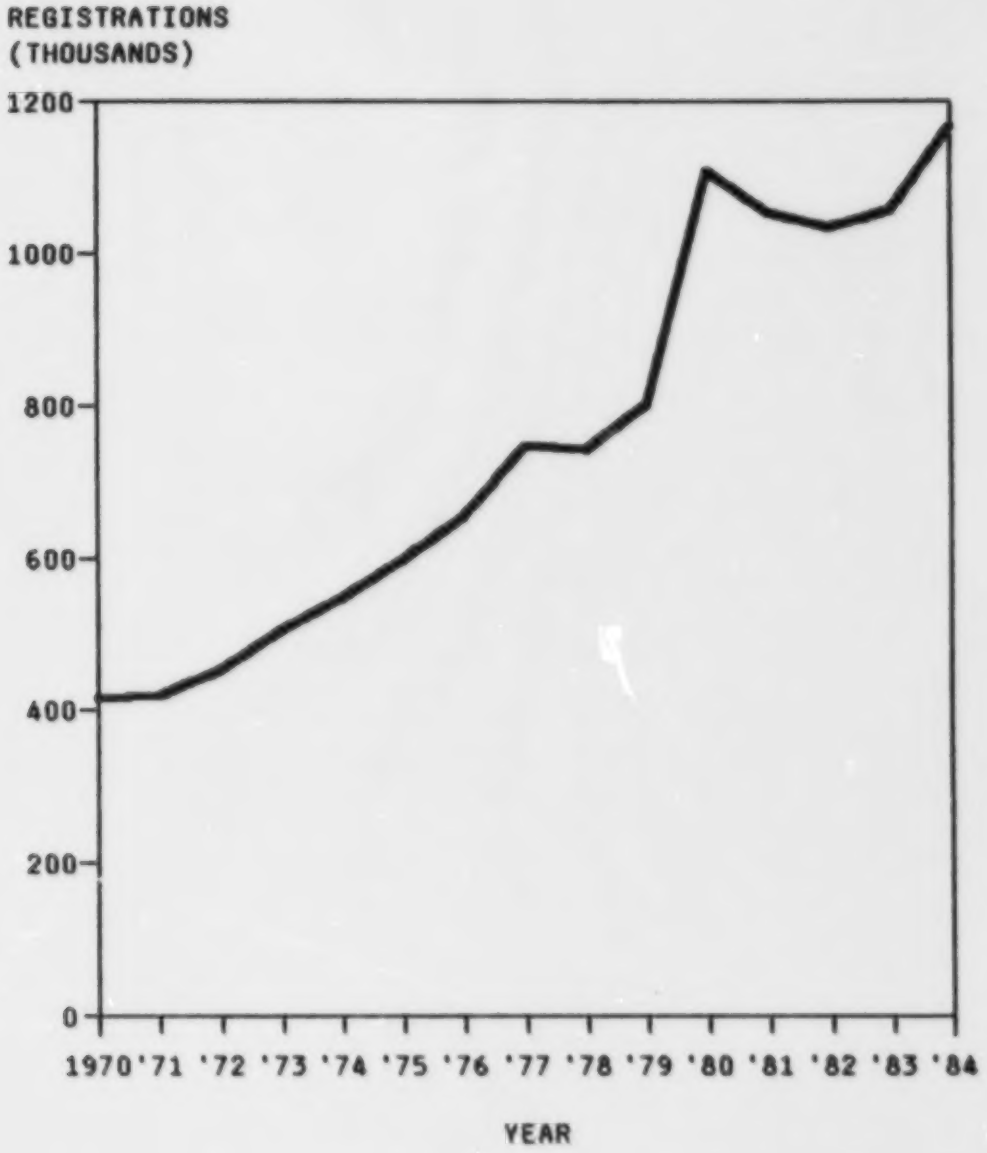
### 2.2.1/ Commercial Truck/Tractor Registrations, Ontario, 1970-1984

The total number of registered commercial trucks has increased by 183% since 1970. Poor economic conditions in the past five years have resulted in a decline in the number of truck registrations. However, 1984 figures suggest that this trend is coming to an end as registrations were the highest since 1980.

**Table 2.2.1/ Commercial Truck/Tractor Registrations, Ontario, 1970-1984**

| YEAR | NUMBER OF REGISTRATIONS (thousands) |
|---|---|
| 1970 | 413 |
| 1971 | 432 |
| 1972 | 467 |
| 1973 | 505 |
| 1974 | 549 |
| 1975 | 598 |
| 1976 | 651 |
| 1977 | 747 |
| 1978 | 739 |
| 1979 | 801 |
| 1980 | 1108 |
| 1981 | 1054 |
| 1982 | 1031 |
| 1983 | 1056 |
| 1984 | 1168 |

Source: Ministry of Transportation and Communication




*Source : Ministry of Transportation and Communications*

**Figure 2.2.1/ Commercial Truck/Tractor Registrations, Ontario, 1970-1984**

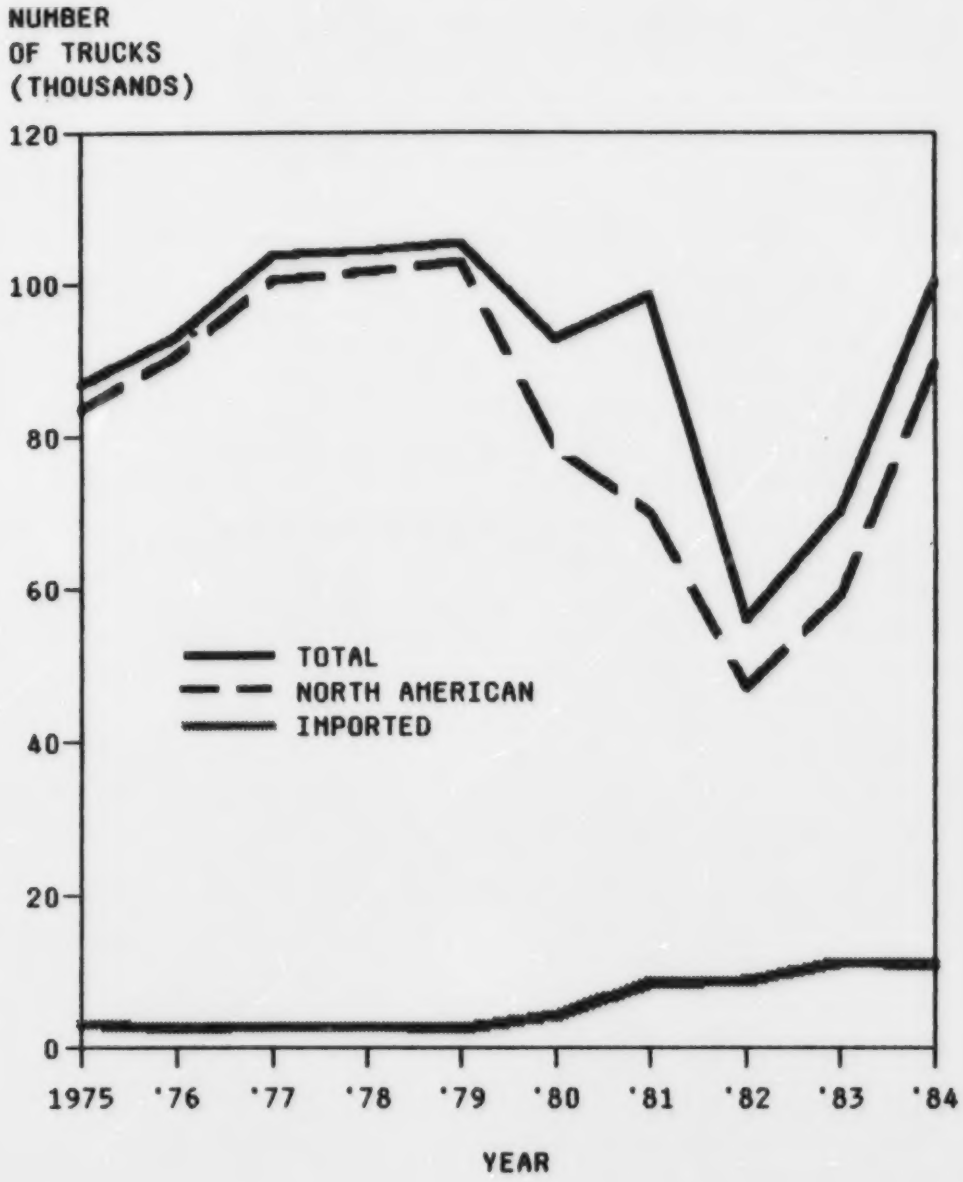
## 2.2.2/ New Truck Sales, North American and Imported, Ontario, 1975-1984

New truck sales increased by 43% in 1984. This increase, in both North American and imported truck sales, can be attributed to recent improvements in the economy.

**Table 2.2.2/ New Truck Sales, North American and Imported, Ontario, 1975-1984**

| YEAR | NORTH AMERICAN | IMPORTED | TOTAL |
|---|---|---|---|
| 1975 | 83 472 | 3 064 | 86 536 |
| 1976 | 90 647 | 2 462 | 93 109 |
| 1977 | 100 516 | 2 842 | 103 358 |
| 1978 | 101 383 | 2 785 | 104 168 |
| 1979 | 102 669 | 2 433 | 105 102 |
| 1980 | 78 271 | 4 207 | 92 478 |
| 1981 | 69 948 | 8 422 | 98 370 |
| 1982 | 46 998 | 8 866 | 55 864 |
| 1983 | 58 908 | 11 240 | 70 148 |
| 1984 | 89 594 | 10 789 | 100 383 |

Source: R.L. Polk & Co. Ltd.




*Source : R.L. Polk & Co. Ltd.*

**Figure 2.2.2/ New Truck Sales, North America and Imported, Ontario, 1975-1984**

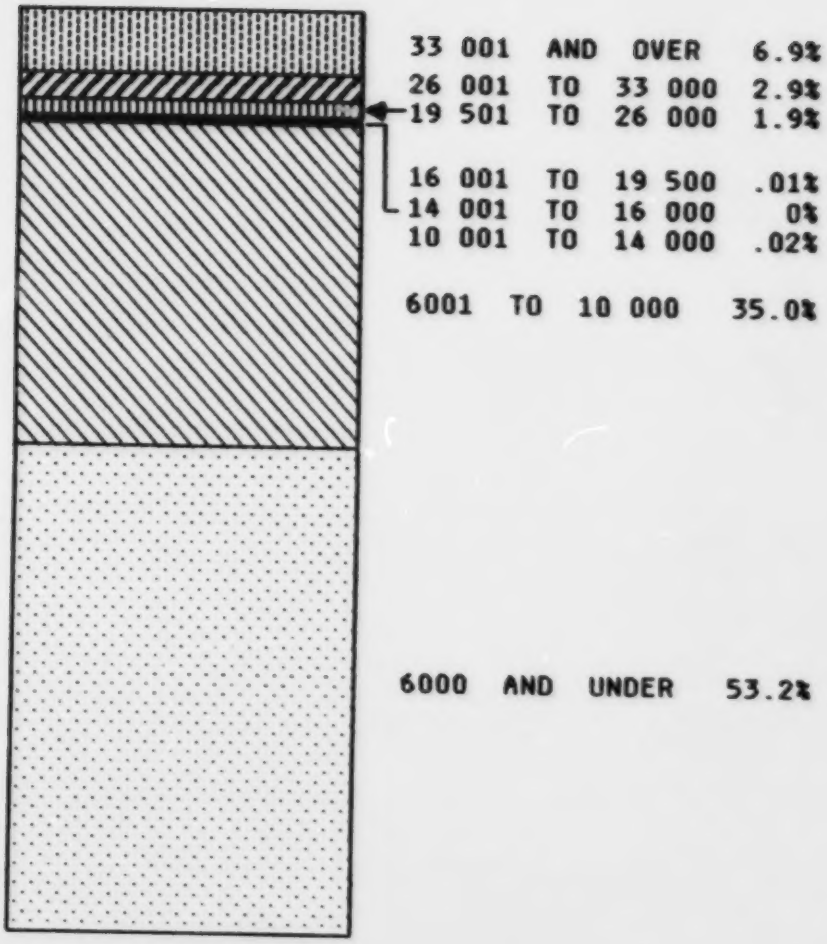
## 2.2.3/ Weight Class Distribution of New Truck Sales, Ontario, 1984

Total truck sales increased by 43% from the 70148 mark reported in 1983. Trucks in the lightest-weight categories comprised the largest percentage of the sales with 88% of the new truck sales going to vehicles weighing 10,000 kg or less.

**Table 2.2.3/ Weight Class Distribution of New Truck Sales, Ontario, 1984**

| 6 000 kg or less | 6 001 to 10 000 kg | 10 001 to 14 000 kg | 14 001 to 16 000 kg | 16 001 to 19 500 kg | 19 501 to 26 000 kg | 26 001 to 33 000 kg | 33 001 and over | TOTAL |
|---|---|---|---|---|---|---|---|---|
| 53 365 | 35.198 | 162 | 0 | 109 | i 993 | 2 872 | 6 684 | 100 383 |

Source: R.L. Polk & Co. Ltd.




NOTE: Due to rounding, the percentages may not add up to 100%

*Source : R.L. Polk & Co. Ltd.*

Figure 2.2.3/ Weight Class Distribution of New Truck Sales, Ontario, 1984

## 2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario, 1975-1983

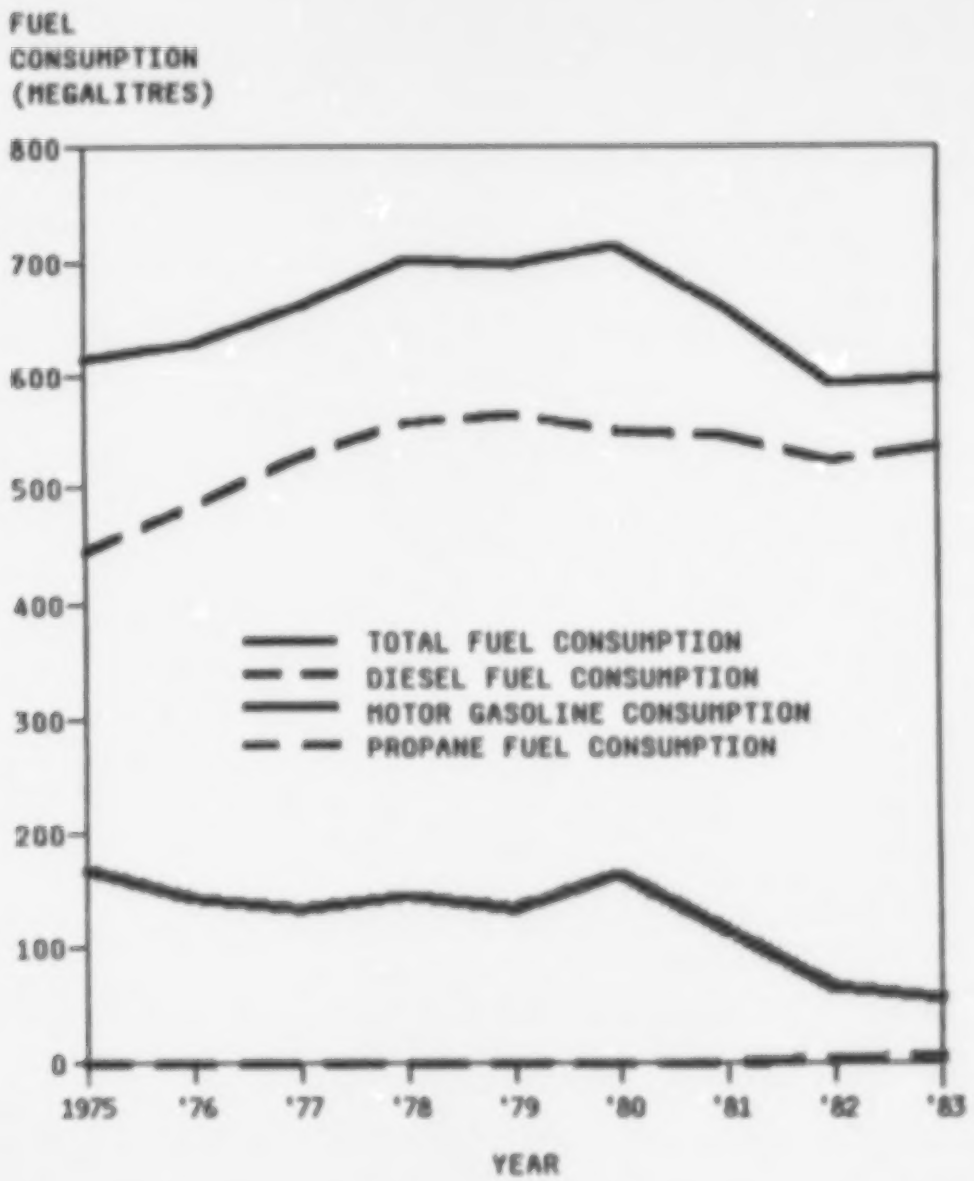
Reflecting the fuel consumption trends of the entire transportation sector, Ontario's for-hire truck fleet increased its fuel consumption between 1975 and 1980. However, 1981 marked the beginning of a dramatic decrease in the total fuel consumption. This decrease may be attributed to poor economic conditions because fuel consumption for the trucking sector follows the economic climate very closely. Gasoline consumption dropped by 43% in 1982 and by an additional 13% in 1983. This substantial drop in gasoline consumption may be the result of truckers switching to alternative transportation fuels such as diesel and propane in order to reduce operation costs.

**Table 2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario, 1975-1983**

| YEAR | DIESEL FUEL (megalitres) | MOTOR GASOLINE (megalitres) | PROPANE (megalitres) | TOTAL (100%) (megalitres) |
|---|---|---|---|---|
| 1975 | 445.3 (72.6) | 168.4 (27.4) | - | 613.7 |
| 1976 | 483.6 (77.3) | 142.3 (22.7) | - | 625.9 |
| 1977 | 527.1 (79.9) | 132.7 (20.1) | - | 659.9 |
| 1978 | 556.3 (79.3) | 145.5 (20.7) | - | 701.7 |
| 1979 | 563.6 (80.7) | 134.4 (19.3) | - | 698.0 |
| 1980 | 549.8 (77.0) | 164.5 (23.0) | - | 714.3 |
| 1981 | 546.0 (82.6) | 114.8 (17.4) | - | 660.7 |
| 1982 | 523.8 (88.6) | 65.3 (11.0) | 2.5 (.4) | 591.6 |
| 1983 | 534.8 (89.6) | 56.8 ( 9.6) | 4.7 (.8) | 596.3 |

[1] NOTE: Figures in parentheses show the percentage of total market.

Source: Statistics Canada (53-222)




*Source : Statistics Canada (53-222)*

**Figure 2.2.4/ Fuel Consumption of Ontario's For-Hire Truck Fleet, Ontario, 1975-1983**

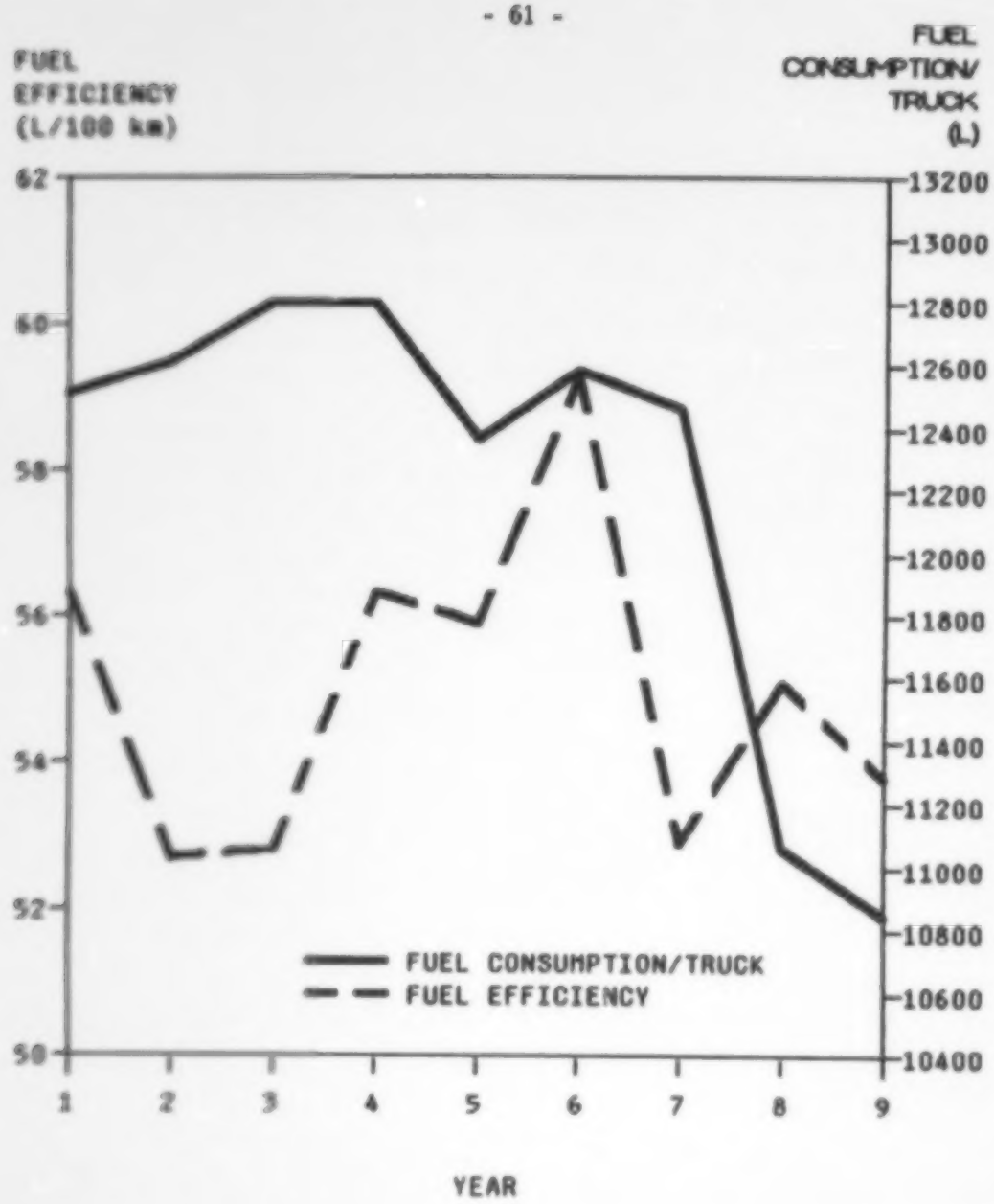
## 2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck Ontario's For-Hire Truck Fleet, 1975-1983

The Overall Fuel Efficiency of Ontario's For-Hire Truck Fleet has only improved by 4% since 1975. This figure should improve in coming years as Fleet owners begin replacing older vehicles with newer, more fuel efficient models.

**Table 2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck: Ontario's For-Hire Truck Fleet, 1975-1983**

| YEAR | NUMBER of VEHICLES | DISTANCE TRAVELLED (millions of vehicles-km) | FUEL CONSUMPTION PER TRUCK (litres) | FUEL EFFICIENCY (litres/100 km) |
|---|---|---|---|---|
| 1975 | 49 051 | 1 090.9 | 12 511.9 | 56.3 |
| 1976 | 49 673 | 1 188.3 | 12 609.5 | 52.7 |
| 1977 | 51 556 | 1 250.2 | 12 798.7 | 52.8 |
| 1978 | 54 860 | 1 247.0 | 12 791.6 | 56.3 |
| 1979 | 56 436 | 1 248.7 | 12 367.4 | 55.9 |
| 1980 | 56 737 | 1 205.2 | 12 589.6 | 59.3 |
| 1981 | 52 999 | 1 248.2 | 12 466.9 | 52.9 |
| 1982 | 53 471 | 1 073.2 | 11 063.9 | 55.1 |
| 1983 | 54 944 | 1 108.4 | 10 852.8 | 53.8 |

Source: Statistics Canada (53-222)




*Source : Statistics Canada (53-222)*

**Figure 2.2.5/ Average Annual Fuel Consumption and Fuel Efficiency Per Truck: Ontario's For-Hire Truck Fleet, 1975-1983**

## 2.2.6/ Linehaul Costs in Cents Per Kilometre, Ontario, 1984

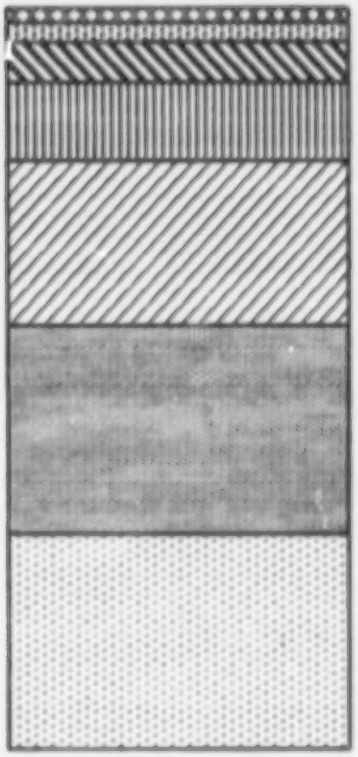
The nature of truck service causes operating costs to vary significantly in relation to particular characteristics associated with each activity. Vehicle configuration, commodity characteristics, hauling distance, degree to utilization, regional area of operation, right-of-way conditions, and driver expertise and attitude affect costs.

Operating costs have been related to these factors to produce representative information for a wide spectrum of motor carrier activities.

**Table 2.2.6/ Linehaul Costs in Cents Per Kilometre, Ontario, 1984**

| COST TYPE | LINEHAUL COST (Paved Road) | LINEHAUL COSTS (Gravel Road) |
|---|---|---|
| Driver | 22.6 | 31.4 |
| Fuel | 23.6 | 23.2 |
| Repairs/Oil | 18.2 | 21.8 |
| Cleaning | 2.0 | 2.0 |
| Transport | 1.4 | 1.4 |
| Tires | 4.5 | 7.9 |
| Fixed | 8.8 | 8.9 |
| TOTAL COSTS | 81.1 | 96.5 |

Source: Transport Canada "Operating Costs of Trucks in Canada 1984"




*SOURCE : TRANSPORT CANADA*

Figure 2.2.6/ Linehaul Costs in Cents Per Kilometre, Ontario, 1984

## 2.3/ URBAN TRANSIT

### 2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984

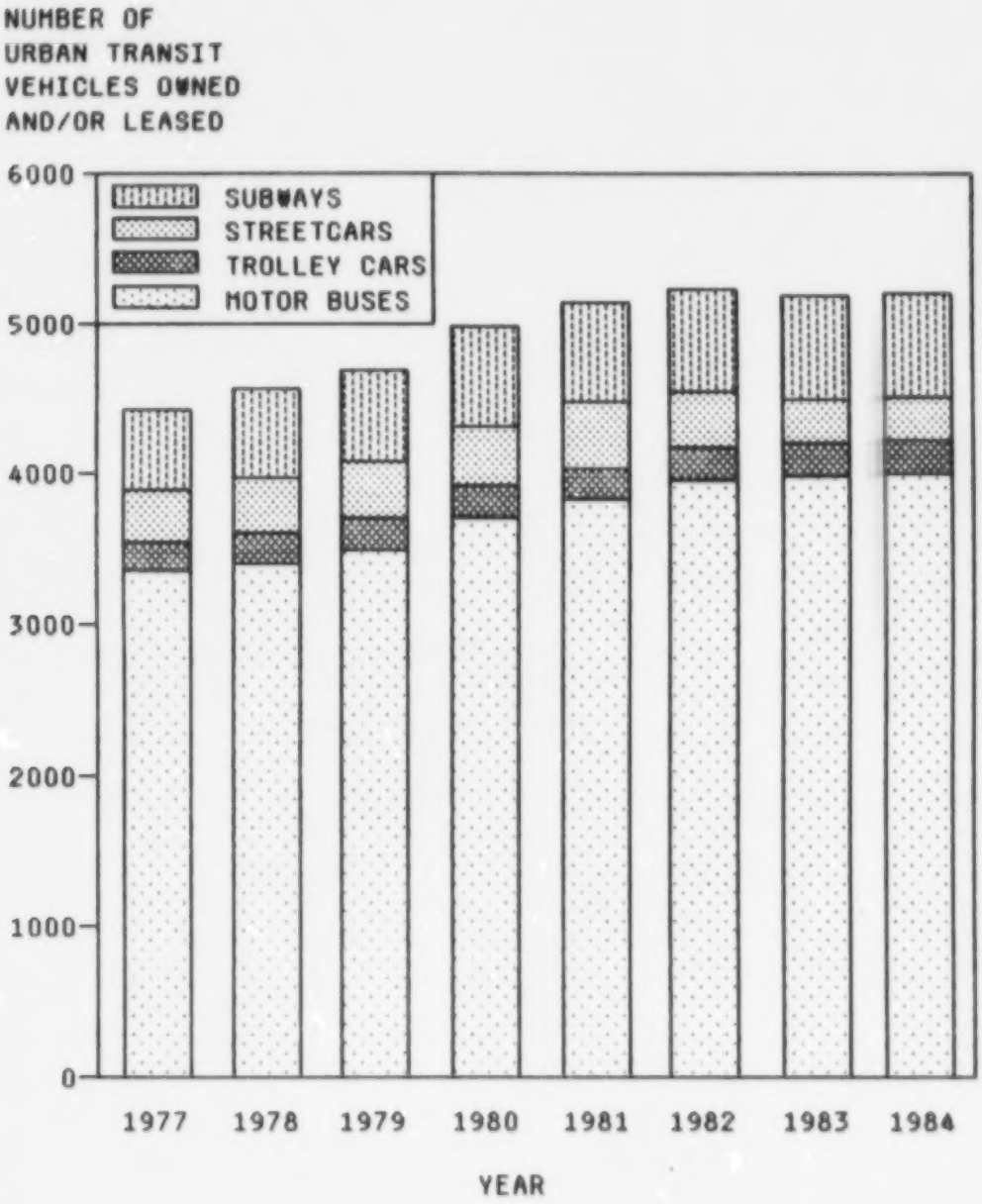
At 77%, motorized buses account for the largest portion of urban transit vehicles in Ontario. This mode of transportation has consistently retained its market share from 1977 to 1984. Subway cars, all of which are located in Metropolitan Toronto, constitute the second largest segment of the total with 13% of the urban transit vehicles in Ontario. The total number of vehicles has increased 17% since 1977.

**Table 2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984**

| YEAR | MOTOR BUS | TROLLEY COACH | STREET CARS | SUBWAY | TOTAL[1] 100% |
|---|---|---|---|---|---|
| 1977 | 3347 (75.4%) | 200 (4.5%) | 356 (8.0%) | 534 (12.1%) | 4437 |
| 1978 | 3409 (74.8%) | 211 (4.6%) | 349 (7.7%) | 590 (12.9%) | 4559 |
| 1979 | 3489 (74.6%) | 211 (4.5%) | 361 (7.7%) | 618 (13.2%) | 4679 |
| 1980 | 3693 (74.4%) | 207 (4.1%) | 401 (8.1%) | 666 (13.4%) | 4967 |
| 1981 | 3827 (74.4%) | 207 (4.0%) | 441 (8.6%) | 668 (13.0%) | 5143 |
| 1982 | 3948 (76.3%) | 206 (4.0%) | 371 (7.1%) | 678 (13.0%) | 5203 |
| 1983 | 3987 (77.0%) | 206 (4.0%) | 307 (6.0%) | 676 (13.1%) | 5176 |
| 1984 | 4003 (77.4%) | 206 (4.0%) | 290 (5.6%) | 676 (13.1%) | 5175 |

Notes: [1] Excludes commuter rail vehicles

Source: Canadian Urban Transit Association




*Source : Canadian Urban Transit Association*

**Figure 2.3.1/ Urban Transit: Number of Vehicles Owned and/or Leased, Ontario, 1977-1984**

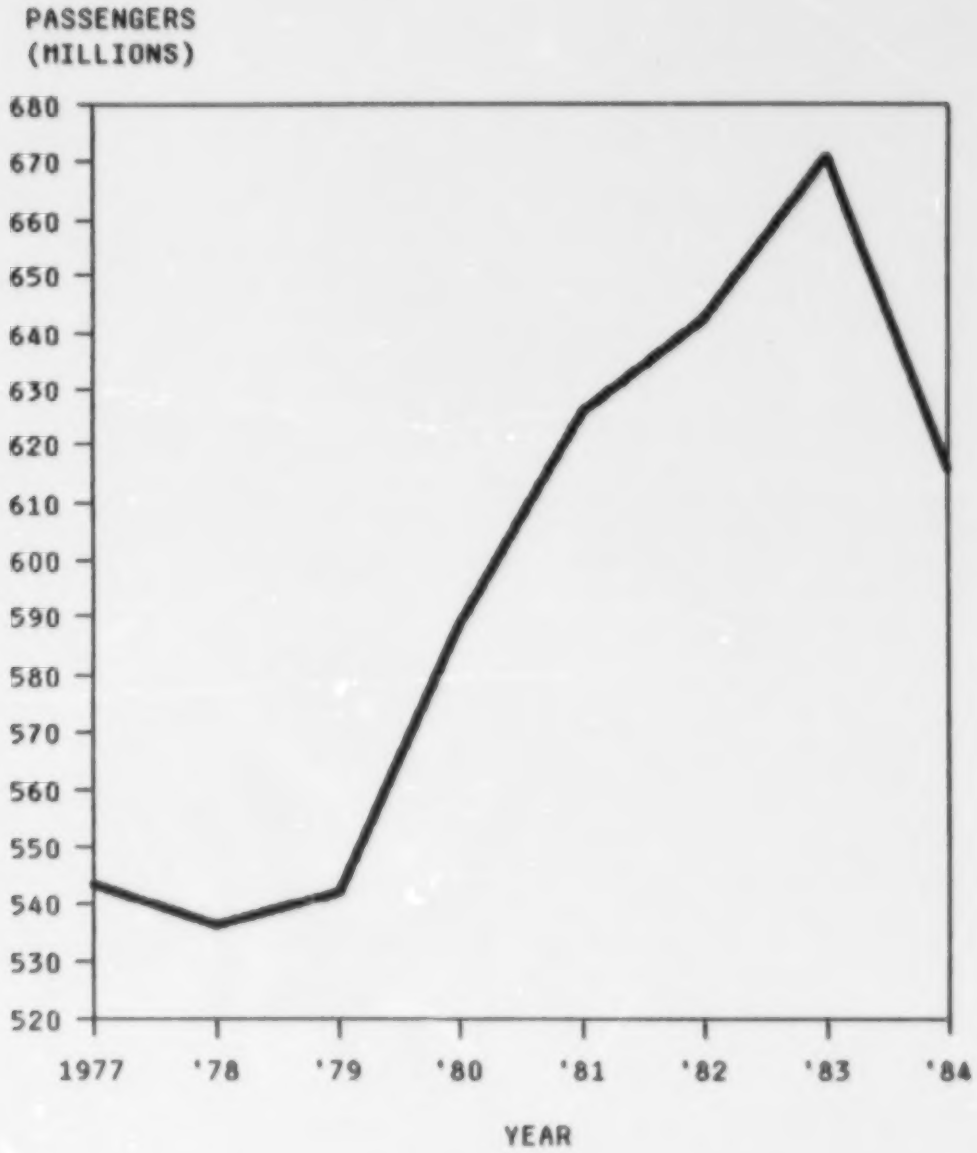
## 2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984

Urban transit use has grown by 73 million riders, a 13% increase, since 1977. This increase reflects the public's growing awareness of the necessity of fuel conservation and the feasibility of urban transit as an alternative to driving their own automobiles. Ridership peaked in 1983 in response to bad economic times, but dropped substantially in 1984 as the economy improved.

**Table 2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984**

| YEAR | NUMBER OF PASSENGERS (millions) |
|---|---|
| 1977 | 543.2 |
| 1978 | 536.4 |
| 1979 | 542.0 |
| 1980 | 588.9 |
| 1981 | 625.8 |
| 1982 | 642.0 |
| 1983 | 671.0 |
| 1984 | 616.0 |

Source: Canadian Urban Transit Association




*Source : Canadian Urban Transit Association*

**Figure 2.3.2/ Urban Transit: Number of Passengers, Ontario, 1977-1984**

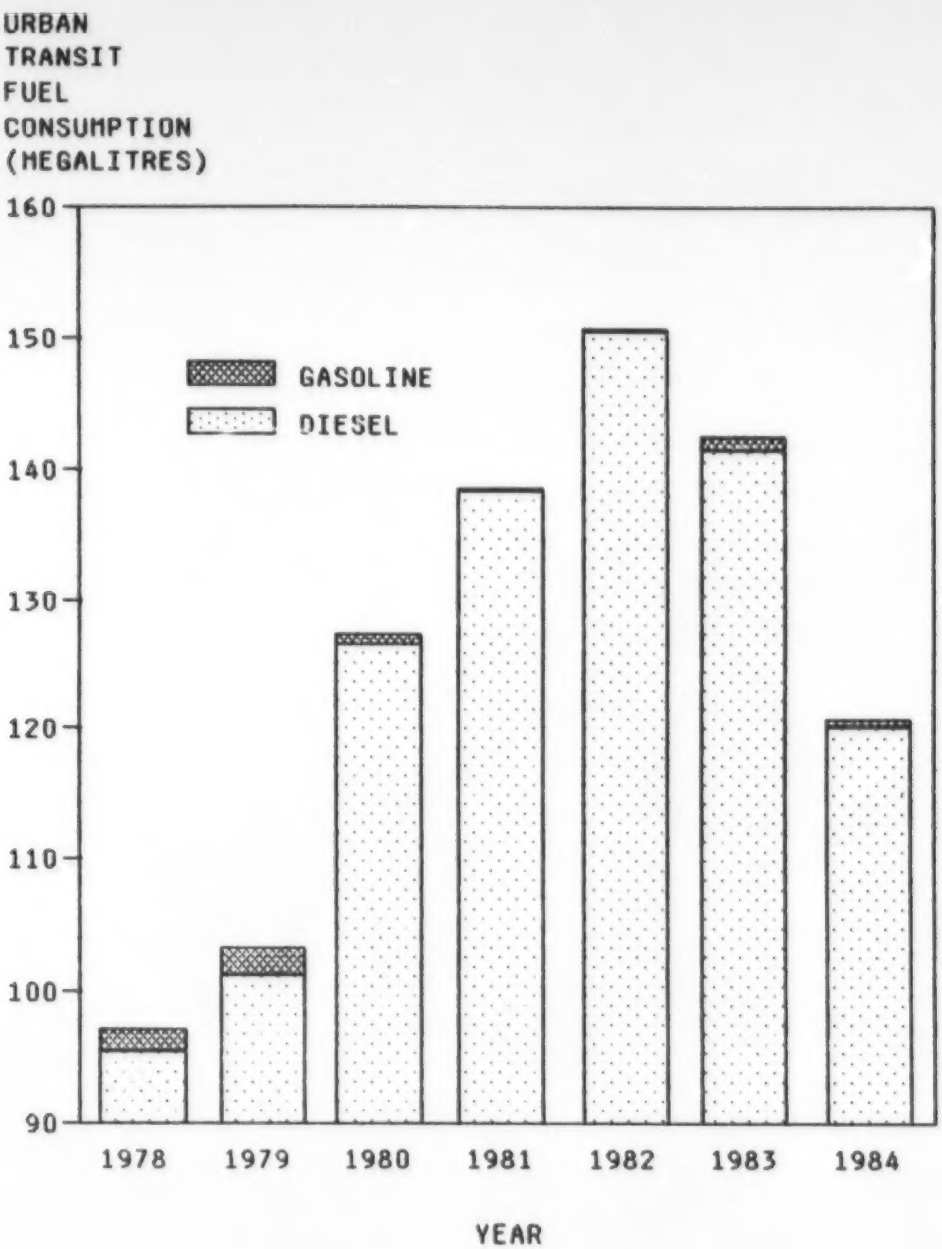
## 2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario 1978-1984

Nearly all (99.6%) of the petroleum products consumed by urban transit is in the form of diesel fuel. The number of litres of motor gasoline consumed has declined by 77% since 1978, although 1983 and 1984 figures suggest that gasoline consumption is on the rise again. Overall, total fuel consumption has increased from 97 million litres in 1978 to 120.6 million litres in 1984; a 24% increase. This escalation in fuel consumption is a result of expanded urban transit service.

**Table 2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario, 1978-1984**

| YEAR | DIESEL FUEL (megalitres) | MOTOR GASOLINE (megalitres) |
|---|---|---|
| 1978 | 95.53 | 1.55 |
| 1979 | 101.29 | 2.02 |
| 1980 | 126.60 | 2.46 |
| 1981 | 138.31 | 0.29 |
| 1982 | 150.34 | 0.27 |
| 1983 | 141.44 | 1.02 |
| 1984 | 120.24 | 0.36 |

Source: Canadian Urban Transit Association




*Source : Canadian Urban Transit Association*

**Figure 2.3.3/ Urban Transit: Gasoline and Diesel Fuel Consumption, Ontario, 1978-1984**

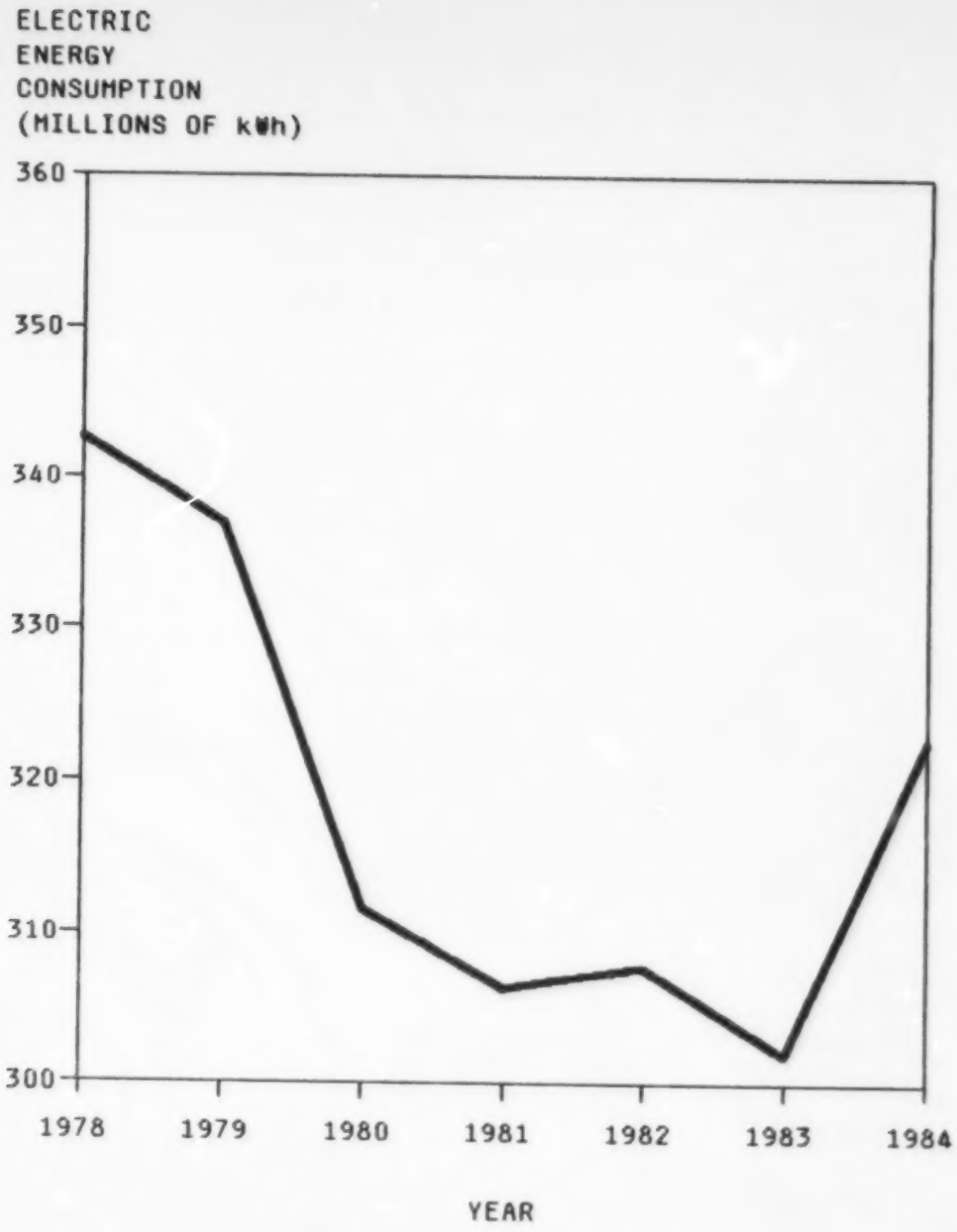
## 2.3.4/ Urban Transit: Electric Power Consumption, Ontario, 1978-1984

Electric power consumption for Ontario's urban transit vehicles, such as trolley cars and subway cars, declined by 6% since 1978. This decrease can be attributed to improved, fuel efficiency in electricity consumption by transit vehicles. An increase in electric power consumption occurring in 1984 may have been the result of increases in the total vehicle kilometres travelled and passengers carried.

**Table 2.3.4/ Urban Transit: Electric Energy Consumption, Ontario, 1978-1984**

| YEAR | ELECTRIC ENERGY (in millions & KWh) |
|---|---|
| 1978 | 342.6 |
| 1979 | 336.8 |
| 1980 | 311.5 |
| 1981 | 306.3 |
| 1982 | 307.7 |
| 1983 | 302.0 |
| 1984 | 322.6 |

Source: Canadian Urban Transit Association and Statistics Canada 53-003




*Source : Canadian Urban Transit Association*

**Figure 2.3.4/ Urban Transit: Electric Energy Consumption, Ontario, 1978-1984**

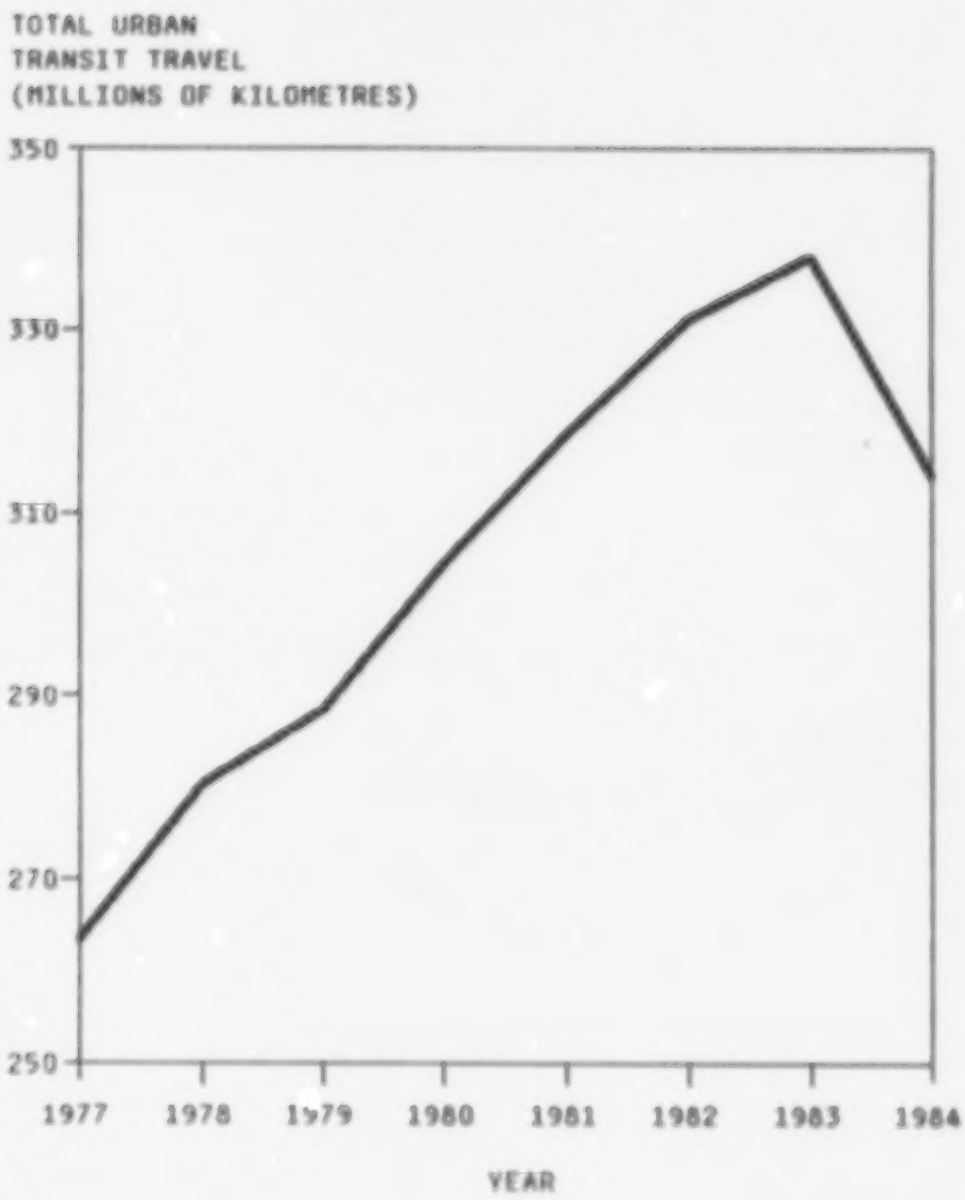
## 2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984

The total vehicle-kilometres travelled by urban transit vehicles has increased steadily from 263 million kilometres in 1977 to 314 million kilometres in 1984 (an increase of 19.2%). This rise reflects the fuel consumption increases over the same time period.

**Table 2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984**

| YEAR | MOTOR BUS (million) | TROLLEY COACH (million) | STREETCAR (million) | SUBWAY (million) | COMMUTER RAIL (million) | TOTAL (million) |
|---|---|---|---|---|---|---|
| 1977 | 184.0 | 9.7 | 15.3 | 54.4 | - | 263.5 |
| 1978 | 193.9 | 9.7 | 15.0 | 61.4 | - | 280.1 |
| 1979 | 203.0 | 9.8 | 14.7 | 60.8 | - | 288.3 |
| 1980 | 217.3 | 9.8 | 15.2 | 62.1 | 0.1 | 304.4 |
| 1981 | 223.8 | 9.7 | 15.0 | 68.5 | 1.5 | 318.5 |
| 1982 | 235.6 | 8.8 | 15.1 | 69.6 | 2.0 | 331.1 |
| 1983 | 242.8 | 9.4 | 14.8 | 69.7 | 1.3 | 338.0 |
| 1984 | 219.9 | 8.5 | 14.8 | 69.6 | 1.3 | 314.1 |

Source: Canadian Urban Transit Association and Statistics Canada (53-003)




*Source : Canadian Urban Transit Association and Statistics Canada (53-003)*

Figure 2.3.5/ Urban Transit: Total Vehicle-Kilometres Travelled, Ontario, 1977-1984

## 2.4/ MOTORCYCLES AND MOPEDS

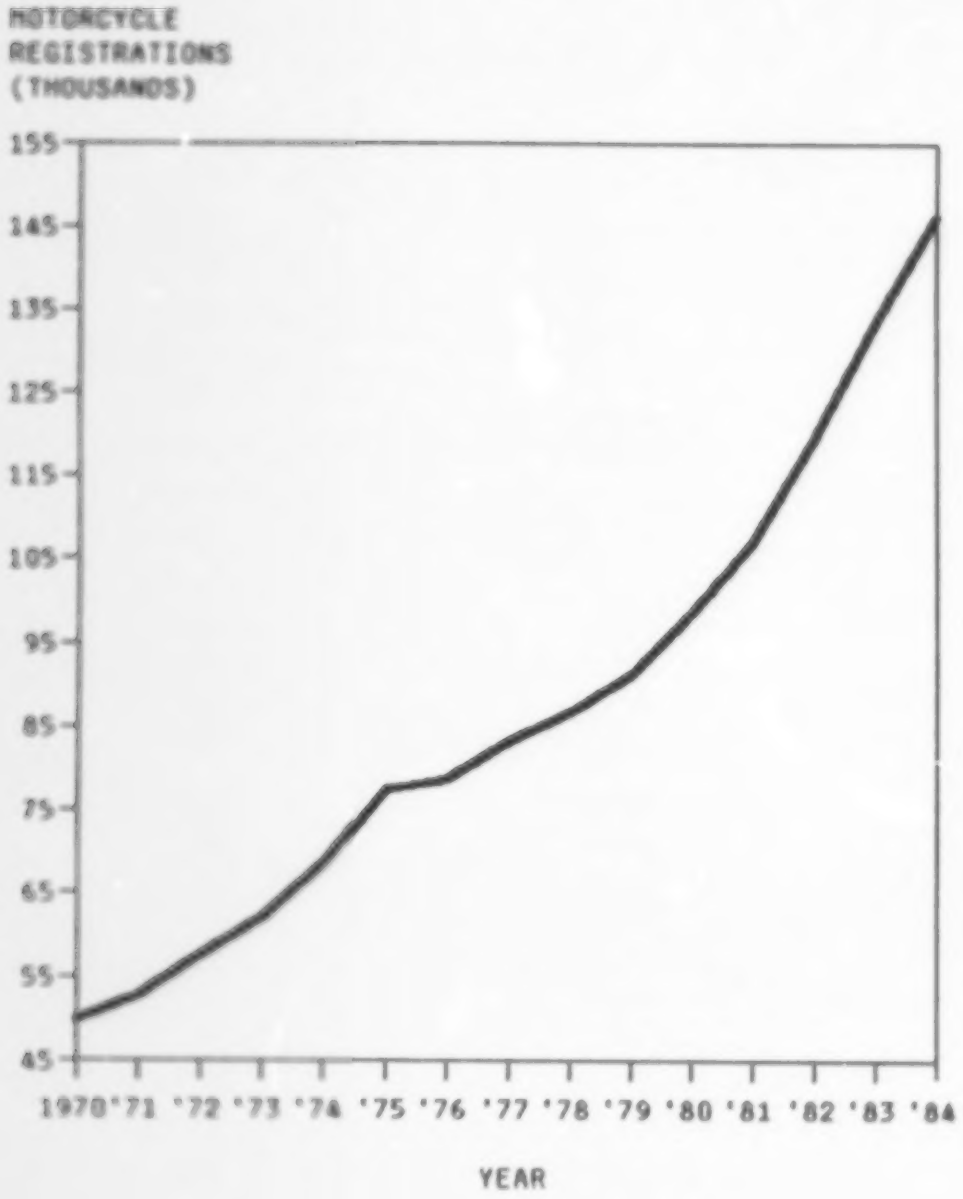
### 2.4.1/ Motorcycle Registrations, Ontario, 1970-1984

Motorcycle registrations have increased by a greater proportion than automobile and truck registrations. Between 1970 and 1984, total motorcycle registrations increased by 194%. Motorcycles are used seasonally and primarily for recreational purposes; therefore, the influence of motorcycle use upon total provincial fuel consumption remains minimal.

**Table 2.4.1/ Motorcycle Registrations, Ontario, 1970-1984**

| YEAR | NUMBER OF MOTORCYCLES (thousands) |
|---|---|
| 1970 | 49.8 |
| 1971 | 52.8 |
| 1972 | 57.7 |
| 1973 | 62.2 |
| 1974 | 68.4 |
| 1975 | 77.3 |
| 1976 | 78.3 |
| 1977 | 82.9 |
| 1978 | 86.4 |
| 1979 | 90.9 |
| 1980 | 98.5 |
| 1981 | 107.2 |
| 1982 | 119.6 |
| 1983 | 133.3 |
| 1984 | 146.2 |

Source: Statistics Canada (53-219) and Ministry of Transportation and Communications




*Source : Statistics Canada (53-219) and*
*Ministry of Transportation and Communications*

**Figure 2.4.1/ Motorcycle Registrations, Ontario, 1970-1984**

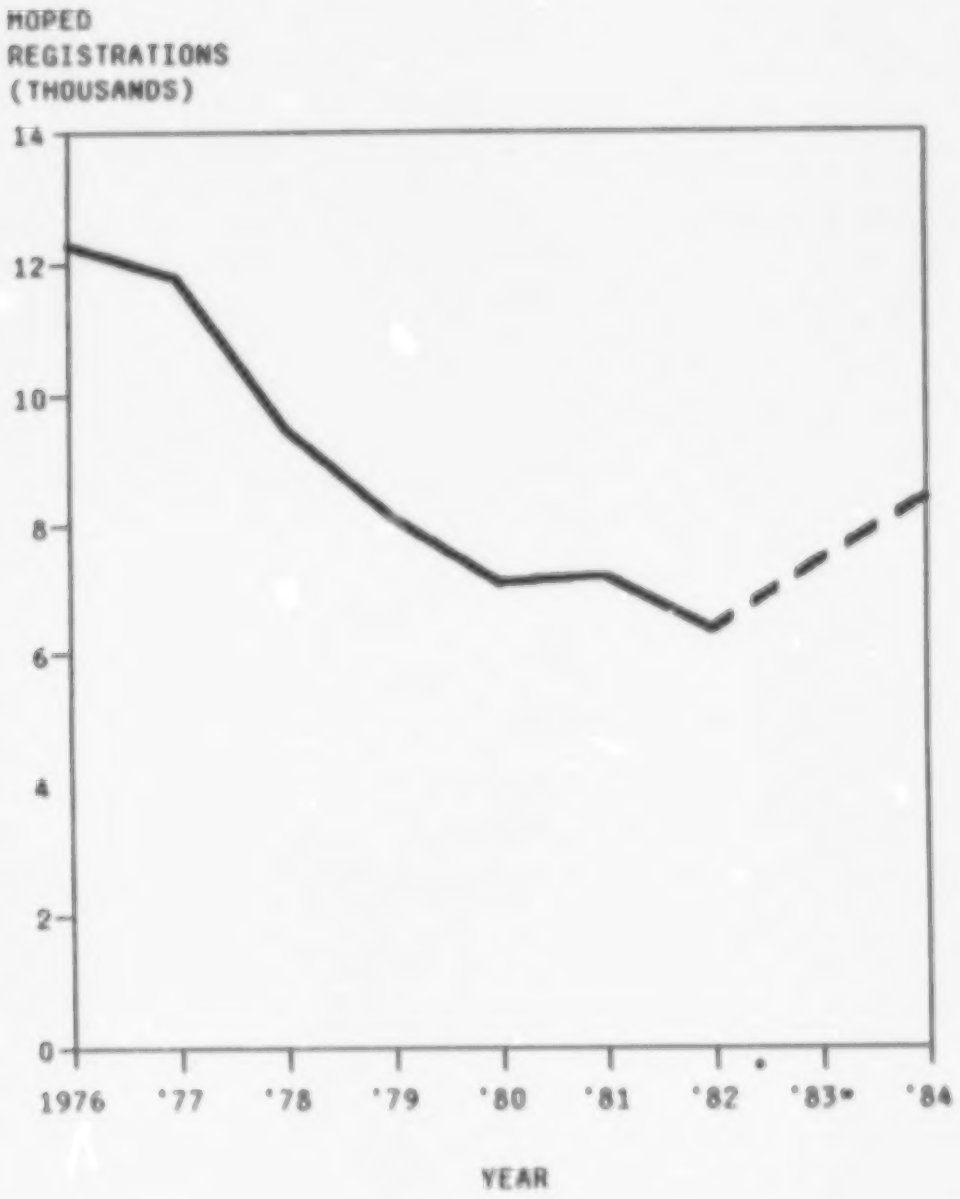
## 2.4.2/ Moped Registrations, Ontario, 1976-1984

The number of moped registrations has declined by 32% since 1976. This decrease can be attributed to the fad-like nature of moped popularity. However, 1984 figures suggest the end of this downward trend as registrations have increased by 31% since 1982. This increase may be the result of a slight resurgence in moped popularity. The increase, the moped has no significant impact on transportation fuel consumption because of the small number of registrations.

**Table 2.4.2/ Moped Registrations, Ontario, 1976-1984**

| Year | NUMBER OF MOPED REGISTRATIONS (thousands) |
|---|---|
| 1976 | 12.3 |
| 1977 | 11.8 |
| 1978 | 9.5 |
| 1979 | 8.1 |
| 1980 | 7.1 |
| 1981 | 7.2 |
| 1982 | 6.4 |
| 1983 | |
| 1984 | 8.4 |

Source: Statistics Canada (53-219) and Ministry of Transportation and Communications




*Source : Statistics Canada (53-219) and*
*Ministry of Transportation and Communications*

NOTE: * 1983 figures are not available

Figure 2.4.2/ Moped Registrations,
Ontario, 1976-1984

## APPENDIX A/ ONTARIO GOVERNMENT POLICY TARGETS

Base year is 1980.

- A 33% decrease in fuel consumption per passenger-kilometre by 1995;
- a 20% decrease in fuel consumption per tonne-kilometre by 1995; and
- a 2% substitution of petroleum products by 1985 and 10% by 1995.

## APPENDIX B/ CONSUMER PRICE INDEX, ONTARIO, 1971-1984

| Year | CONSUMER PRICE INDEX | |
|---|---|---|
| 1971 | 2497 | 48.0 |
| 1972 | 2662 | 49.8 |
| 1973 | 3002 | 52.1 |
| 1974 | 3111 | 56.4 |
| 1975 | 3225 | 61.9 |
| 1976 | 3342 | 67.3 |
| 1977 | 3490 | 72.2 |
| 1978 | 3630 | 76.6 |
| 1979 | 3725 | 82.5 |
| 1980 | 3794 | 90.2 |
| 1981 | 3867 | 100.0 |
| 1982 | 3879 | 110.8 |
| 1983 | 3420 | 117.7 |
| 1984 | 3905 | 122.3 |

Source: Statistics Canada (62-001)

## APPENDIX C/ METRIC CONVERSION TABLE

| | |
|---|---|
| 1 mile | = 1.609 km |
| 1 kilometre | = 0.621 miles |
| 1 barrel | = 158.987 litres<br>= 34.972 gallons (Imperial)<br>= 6.12 gigajoules<br>= 9702.0 cubic inches |
| 1 gallon (Imperial) | = 4.546 litres<br>= 1.2195 gallons (U.S.) |
| 1 gallon (U.S.) | = 3.785 litres<br>= .82 gallons (U.S.) |
| 1 litre | = 0.22 gallons (Imperial)<br>= 0.264 gallons (U.S.) |
| 1 megalitre | = $1.0 \times 10^6$ litres<br>= $1.0 \times 10^3$ cubic metres |
| 1 gigajoule | = $1.0 \times 10^9$ joules |
| 1 terajoule | = $1.0 \times 10^{12}$ joules |
| 1 petajoule | = $1.0 \times 10^{15}$ joules |

ENERGY CONTENT OF FUELS

| | |
|---|---|
| 1 gigajoule | = 28.855 litres of gasoline |